

Alberta Industrial Development  
Association

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ADDRESSES

INDUSTRIAL CONGRESS  
1920

# Opening Address

Hon. G. P. Smith,  
Minister of Education, Alberta Government

Chairman, ladies and gentlemen: At the outset I must apologize on behalf of the Lieutenant-Governor of the Province, who intended being here this morning, but he unfortunately had to leave the Province for a trip to Eastern Canada; and I have also to tender the excuses of the Premier. Most people know that at the present time there are rather important negotiations on at Edmonton in regard to the railway conference, and the Premier found it impossible to leave the city today. As a result of this I have been asked to represent him here, and on behalf of the Province of Alberta to extend an official welcome to the visitors from the East, who are here to spy out the land and discover what opportunity there may be here for them and for the industries which they represent.

We all realize that at the present time there is a good deal of uncertainty in the business world, a good deal of unrest, quite a good deal of doubt as to what the future may have in store.

I must say that the Province of Alberta is anxious indeed to develop here a well-rounded business community. We realize that no community can prosper if it pins its faith on any one industry, and for that reason, therefore, we are anxious to encourage a well-rounded industrial development of our province.

We believe that capital and labor are necessary to each other. We deplore any conflict between the two, and believe, as all sane people must believe, that they are necessary one to the other; and that there should be some way of reconciling their attitude and getting together for the common good.

We believe also that the city is just as necessary to the farming community as the farming community is to the city. We believe that the city and the country are the counterpart of each other, and that both are necessary. We believe also that the producer is not more necessary than the consumer. There must be a market for the goods produced. Now while that is true, and I want to speak very frankly this morning—while that is true, I would not like to have it understood that the Alberta Government is anxious to induce manufacturing concerns or industrial enterprises of any kind to come to this province unless they find conditions here such as will give them a natural scope of development. We do not believe in encouraging any industries to come to this province that would have to draw their life through artificial respiration. We

believe that they should find conditions favorable, and not come to this province or any other province unless they can find at least reasonable favorable conditions for their natural development. Apart from that we are most desirous to welcome any kind of enterprise to this province.

Speaking, Mr. Chairman, of the lack of confidence that does exist between labor and capital, between consumer and producer, I might say, in my opinion, the profiteering business has gone very deep down, and is not confined to any one class. We know that blame has been placed mainly upon certain classes, and the manufacturing industries, I suppose, come in for more than their share. I believe that today there is profiteering not only on the part of capital, but I believe there is profiteering also on the part of labor. When the people insist on getting more pay for less work, and less efficient service, there is profiteering there too, and it has permeated every part of the social life. Something must be done to make conditions more sound than they have been, and I believe that the manufacturers and the capitalists generally should perhaps take the lead in this work of re-establishing a feeling of mutual confidence.

If capital can convince the people of this country that they are doing their job, not to regulate prices and bring things back to a normal condition, then we could with some reason and prospect of success turn our attention to labor and to the consumer, and ask them to take a reasonable attitude. We could ask labor not to demand higher wages for shorter hours and less efficient service, re-establish confidence, and if possible root out the suspicions that are doing a great deal of harm at the present time. I want to express again my full belief that this is not confined to any one class or group of classes, but that it permeates the whole people today.

I do not think that a country can be built up to any strength on a purely artificial basis. I believe that the natural order is the right one and the best one for any country to adopt, and if we have a province of prosperous producers of wealth we need not fear for the future; the city will grow, the tall chimneys will come into place, and the industrial future of development will follow without very much effort, as industries are always seeking markets amongst people who can afford to pay. I am very much afraid that we have not followed very closely this line. Our cities have developed rather ahead of their time, several years ahead of the country to which they are surrounded, and the great aim of all men in positions of public trust today is and should be to endeavor to settle our minds to another important movement that is on at the present time, a great colonization scheme, a scheme of getting in settlers to occupy lands, creating here a market amongst prosperous people, so that we can offer inducements to industries and manufacturing concerns.

We have here a wonderful country. I think this is becoming more and more recognized. It has been told that we have very early frosts year after year, but, Mr. Chairman, you know and I know that even in those years when we have these frosts, we still reap oats that average

34 bushels to the acre, weight 34 lbs. to the bushel, and there never has been a year that we have failed to produce food. We are told sometimes that there is too much rain in the West, that we are being flooded out, but people do not realize that Alberta is an empire in itself: four hundred miles from east to west, eight hundred miles north to south—an empire, and these things that are reported, and in a very exaggerated way, are only 'real misfortune'. We were told last year, and it was reported all over the land, that there was a terrible drought in Alberta and Southern Saskatchewan, and hardly anything at all would be saved; yet when the rains had cleared away, we had a half profit all over the province, taking the province as a whole. We were told last winter that the stock here were all starving for lack of feed; but spring has come, with a splendid development of grass, and feed today is plentiful and the danger is all gone. The best authority today tells us that the total loss in this province cannot exceed eight per cent.

A Swedish settler one day who came here with the proverbial fifty-cent piece in his pocket made a statement: "I have been here twenty years, and I have yet to see a total failure of crop in Alberta, especially in parts under particular unfortunate conditions."

Another thing I would like to say, and that is, that this is an unusual province. It is a double-deck province. We have the surface wealth, and we have a lower deck that offers still further possibilities of great wealth. We have good farming country, and we have a magnificent dairying country. When you come back through the northern portions of the province you will find abundant timber, hills, magnificent lakes and streams, unlimited water for stock; you will find conditions ideal, conditions best adapted for the production of butter and cheese and dairy products. We have a wonderful dairying country, a wonderful stock country, the scenery is magnificent, wonderful wealth of furs to the north, our lakes teem with fish; unlimited water power, large quantities of timber in portions of the province (the Chairman says not to forget the gas), just dealing with the upper deck.

In the lower deck we have the greatest coal fields, gas wells (which you saw at Medicine Hat). We have oil prospects all over the province. Today some of the greatest concerns in America are satisfied that great wealth in oil lies here. We were first last year in the production of coal amongst all the provinces of Canada, Nova Scotia having previously produced more coal. We were very high upward in dairy products, and I want this and ask you to really believe that this is something to fall back upon no matter what industry you are interested in, and should cause any man to give careful consideration to furthering that line of activity he seeks to follow. The basis of success in any line must be the development of the natural resources of the province in question and the general prosperity of the people, otherwise there cannot under any conditions be prosperity for any special industry no matter how you seek to bolster it up artificially.



We are not forgetting the development of these resources in an educational way. There is a department of research operating at the University of Edmonton to give accurate information as to the resources of the province, because we are not purely a farming country, and we look forward to a very wide development here.

We have at present started construction on a splendid educational institution in this city that will cost a million dollars and will undertake secondary education; so that you see the province is not confined altogether to the material side.

These Western Provinces have taken very advanced steps in progressive social legislation. We have our Mothers' Pension Act, Factory Acts, Child Labor Laws, and a great many acts of that nature that seek to render aid socially.

We have good schools in the province. No matter what town or city you pass through, the finest building will be the school, and while education does not consist of brick and mortar, it at least is a good indication that we have the interests of the children at heart, and we are doing everything possible to foster education along the best and sanest lines. We are giving very special attention to producing teachers. In order to make sure of the class of teachers, we are not training any with less than a full year of normal school training. We have adopted a policy—lending government money to pay for the normal training, and give the teacher two years after graduation to repay, and we almost doubled the attendance at our normal school last year by that policy.

We have undertaken a good many other things that have not been undertaken elsewhere, giving help to country boys and girls by paying fees of non-resident high school students. We are getting results, and while today there is a great shortage of teachers all over Canada, United States, and even in the Old Land, of this province today I may say this: We have more schools in operation, more qualified teachers in the province, more highly trained teachers (12 months normal training) and fewer permits in the history of this province. So we must be bringing results.

I have tried to paint a very rapid sketch of what this province has to offer to the manufacturers of Canada. You are good citizens. We want more of you. I believe that you will make no mistake in coming to this province, growing up with the province, and I believe in the words of Robert Service:

“Dreaming of . . . .”

# The Irrigation Problem in Western Canada

T. H. Peters, Esq.

Commissioner of Irrigation, Dept. of Interior

Mr. Chairman:

The address which I am going to give you deals with a very large problem or enterprise affecting nearly all of what is commonly spoken of as Southern Alberta. Irrigation is also a very live question in Southwestern Saskatchewan but I will deal mainly with Alberta, saying only a few words later on about the sister province. I understand that I am addressing a large number of visitors from the East, and so will make reference to a number of facts which are common knowledge to residents out here but which may not be known to or appreciated by our visitors. I cannot attempt to deal with so large a subject exhaustively in the limited time assigned to me but will try and place before you in a broad way the essential features.

First as to the reason why this paper is being read before an Industrial Congress. At first thought it might not seem to be apropos but I think that it is. I take it as an admitted fundamental that industrial development should not be forced into existence, nor can it be maintained economically unless preceded by a healthy and fairly numerous rural population. So this is the link between the development of irrigation on the agricultural lands and the development of industries in the urban centres. Irrigation farming will double the population and production on the agricultural lands in comparison with the so-called dry farming. This may sound like a very sweeping and possibly exaggerated statement, but yet it is a conservative statement of fact as applied to that large portion of Southern Alberta which I will describe briefly a little later.

I could not attempt to forecast what the ultimate condition will be but at present it is generally considered that the desirable holding for a dry farm is a half section or 320 acres of land. It is again a conservative statement to make that a quarter section or 160 acres of irrigated land will produce as much as the double area of dry land, and has, in addition, other advantages such as the maintenance of soil fertility and the assurance of a crop every year.

I would like here to make an early explanation regarding the great freedom which I am going to take in making points showing the advan-

tages of irrigated land by comparing it with dry land. There is no desire at all on my part to "boost" irrigation by "knocking" the dry lands. Such a course would be worse than foolish, because we will later see that there is only a small percentage of the land in Southern Alberta that can be irrigated, and our great mainstay has always got to be the dry land. I take the dry lands as a basis of ready comparison because irrigation is just a specialized line of general agricultural practice, and I feel that Southern Alberta dry lands have already established such a record that none of the comparisons made can cast any reflection on them. Whether you think of one farm or the whole area, the comparatively small area of irrigable land is going to be a very valuable adjunct to the large areas of dry land because they are going to establish hay fields and that is what Southern Alberta lacks at present.

You will understand that in dealing with so large a territory there must be many local differences in climate, soil and general topography, but speaking broadly, the area in which irrigation may be considered as necessary to permanent agricultural development in Alberta is the block contained between the International boundary and the north line of township 28 which runs east and west through Drumheller and east of the west boundary of range 25 which runs north and south through Macleod. From this there should be excepted the higher and rougher lands on the west slopes of the Cypress Hills which lie south of Medicine Hat. This block is generally comprised of a great smooth treeless prairie suitable for the development of large projects and where all ordinary field crops can be successfully raised by irrigation. To the west of the line described as the west boundary many small private schemes have been developed, but these lands rising towards the foothills of the Rockies are higher in elevation, rougher in general topography and more suited under irrigation to specializing in raising fodder crops only and the developing of stock or dairy farms.

The great block as described contains about fifteen million acres of land and the large centres to which it is tributary are Calgary, Medicine Hat, Lethbridge and Macleod. It is not to be understood that all of this acreage can be irrigated for such is not the case. Some of the land cannot be irrigated for physical reasons and the available water supply is another limiting factor. The mental picture to be gained of the ultimate development is rather of this great block generally developed under dry farming methods but with large irrigated sections scattered through it not only creating areas of greater population and production but assuring to the whole an ample supply of fodder crops which cannot be grown on the dry lands.

Within the block described, the C.P.R. constructed projects comprise 743,000 actual irrigable acres. Under the partly constructed Canada

Land and Irrigation Company project, 203,000 acres. Comprehensive surveys executed by the Dominion Government have determined that there is in addition 600,000 acres which can be beneficially irrigated. The total of actual irrigable lands is 1,546,000 acres which is only ten per cent. of the whole block. Please note that I am not attempting to give you the total area that may be irrigated in Alberta some day but only the total of schemes now constructed and other areas which already have been actually surveyed.

To give you an idea of the climatic and other general conditions in the area described, the precipitation runs from 10 in. to 15 in. as against 25 in. to 40 in. in the settled parts of Ontario. The summer temperature is about 60° or 5° lower than central Ontario. The lands vary in altitude from about 2,500 ft. to 3,500 ft. One extraordinary feature which must not be overlooked is the Chinook winds. It is a matter of practical importance to note that the areas in the south country are relatively much drier than those in the north country having similar conditions of precipitation, due to the effect of the dry, warm Chinook winds which blow from the south west.

I would like at this point to bring to attention the difference as regards agricultural conditions which exist between northern and southern Alberta. If you draw an east and west line through Red Deer town you have approximately the dividing line between the brush or bush country to the north—which is not unlike Northern Ontario—and the great treeless plains to the south. To the south of this line you have the country where natural precipitation is deficient and where irrigation is required; to the north of this line irrigation is not required. In fact much of the country to the north requires drainage.

In the block described as requiring irrigation there are great potentialities for agriculture—just one thing is lacking and that is a sufficient natural supply of water. The soil is of great depth and as fertile as any in America. The climatic conditions are not, of course, comparable with those where irrigation was born in the old world of Mesopotamia, but they are as good as those in many places in the United States where irrigation has been successfully developed for many years.

In dealing with this subject so far I have dealt particularly with the large aspect of the case and the large developments. To indicate to you however, how widespread irrigation is, I should add that in Alberta there are outside of the totals already mentioned some 57,000 acres of irrigable land which have been developed under small private schemes, each covering on an average perhaps two or three hundred acres. These schemes are located mainly in the lower foothills south of Calgary and on the west slopes of the Cypress hills. They take their water supplies as a rule from the smaller streams where the cost of diversion works is small.



In southwestern Saskatchewan mainly in the district south of Maple Creek there have been similarly developed a large number of small private schemes, totalling in all about 50,000 acres of irrigable land. In this district the great need today is for reservoirs to conserve the spring floods which now largely run to waste. The Saskatchewan government has recently passed an Irrigation District Act similar to the Alberta Act, and this now makes possible co-operative effort on the part of the owners of the small schemes to finance the construction of common reservoirs which will conserve a supply of water for their lands.

Irrigation has received a black eye in some places in the United States, not through any fault of its own, but because of many beneficially unsound projects which have been launched by promoters of land selling companies.

There is one thing that you must have with an irrigation scheme and that is a good supply of water to irrigate with. Most of the failures referred to have been where a wildcat scheme was started where there was no adequate supply of water. The officials who framed the Dominion government law which controls all irrigation development in Alberta, were wise enough to profit by the mistakes which had already been made in the United States and I think we can boast of having laws in existence here which ensure that no wildcat schemes can be developed. This is a point of very great importance. I would dwell on this point a moment longer, because what is needed at the present time is capital to develop new projects and there still seems to be in the eastern money markets an air of suspicion towards irrigation bonds. All the further developments now proposed have been surveyed by the Dominion Government, and following out the spirit of the excellent laws I think that never before have so careful investigations been made covering the whole ground of measuring the available flow in the streams, making instrumental surveys, and also testing the suitability of the soil.

I made the statement a little further back that irrigation doubles the population and the production. We cannot show you as yet the lands with the greater population, because there has been so great an area to settle that the lure of cheap lands has led the new settler to keep spreading out into the vacant places. But from now on, as the vacant lands become scarce, it must be an axiom that the land with the doubled productivity will have the doubled population. I don't want to weary you with a lot of figures but it is now a known fact that irrigation will double the production. And yet again this is a conservative statement. Mr. W. A. Fairfield of the Dominion Government farm at Lethbridge has figures covering a period of twelve years showing that his irrigated plots have, over a wide range of field crops, yielded double the amount of his dry plots after summer fallow. As the irrigated plots under a rotation system yield every year and the summer fallowed plots

yield only every other year, the irrigation has really quadrupled the yield on the same area. And perhaps the greatest point of all is that the irrigated land will yield an average of 3½ tons of alfalfa per acre, while on the dry land no hay crops of any kind can be successfully grown.

You understand, of course, that a farm will not irrigate itself, and that there is considerable additional expense and labor involved in spreading the water over the land. Also interest charges have to be met on the capital invested in the main canals, and there is the expense of operating and maintaining these works. But after these additional costs have all been met there is still a handsome additional profit which has accrued from the use of the water on the lands. In the Lethbridge district where irrigation has been practised for the longest time and has become well established it is generally accepted that a full water right doubles the value of the land.

Now gentlemen, I daresay you are all wondering where the nigger in the woodpile is, and why with all these advantages we don't have more irrigation. This brings us to that point which we all unfortunately have to consider, the question of dollars and cents. You cannot get something for nothing, and as I have said, it costs money both to build these irrigated schemes and to operate them. What is required just now is capital to finance new developments and it is in this field that I think the eastern manufacturer can legitimately become interested.

I presume that this congress is largely interested in developing manufacturing industries in the west but whether you manufacture in the west or in the east you have got to have a market for your manufactured wares. I think it is generally true, but in this province it is certainly true that the great bulk of our money is now and always will be provided from agriculture. You know this, of course, but I wished to bring up the point in order to go on and note a further point in my subject of irrigation.

Dry farming is a misnomer because you cannot grow anything on a farm that is really dry. You must have water to grow a crop. The so called dry farm depends for its water on the natural precipitation. If you plot a chart of vertical columns showing the annual useful precipitation over Southern Alberta the striking thing about it will be that it is all ups and downs. And so the production is on our dry farms. And naturally so have our business conditions been all ups and downs. A year of good rainfall means good crops and plenty of money in the country to buy manufactured wares and the dry years are the reverse.

I know how hard it is for the farmer to conduct his business when he never knows what next year is going to be like and therefore cannot confidently plan ahead and conduct his business accordingly. I presume it is equally difficult for you who are manufacturing and who have

certain districts in which to sell your goods to never know whether you are going to have a big demand for your stock or otherwise. Irrigation stabilizes agricultural production, and therefore stabilizes business conditions. The farmer who has a supply of water which he can count on every year has an assurance that he can raise a crop every year.

And another point along the same lines. It is hard to make a home out on the prairie where there is so much wind and so much sunbath. Where one is, in fact, exposed to all the elements. If the farmer and his wife and his children have a nice home they will love it and love the farm. If they love the home they will stay on the farm and work it better than under contrary conditions. This is one of those human problems often overlooked but really far-reaching in their effects.

There is one thing that helps to ameliorate the conditions on a prairie farm above anything else and that is the growing of trees which break the wind and give shade from the sun. It is a difficult thing to establish a grove of trees on the dry prairie. Trees flourish under the irrigation ditch, which also makes possible to the farmer's wife a good vegetable and flower garden.

Now a word concerning the development of irrigation in Southern Alberta. The policy of the Dominion government has always been to make the surveys to determine the feasibility of developing certain areas under irrigation but has never undertaken any actual construction work. The first phase of the development has been handled by large companies who acquiring large blocks of vacant Dominion land constructed the works to serve them with water, and then sold the irrigable land to new settlers with a perpetual contract for the supply of water to the lands at a fixed annual charge. This form of enterprise has developed all the large projects which have been constructed up to date.

Now the condition is basically changed because the large areas which still await development are practically all settled and the people are on the land. The proposal is to develop these areas by co-operative effort of the land owners themselves and the necessary machinery has been created by the provincial government in passing the Irrigation District Act. In a few words this Act provides for the erection of irrigation districts with power to raise the necessary funds, to construct the irrigation works, by selling bonds the security for which is the land within the district. In principle the method proposed for handling these districts is not unlike that which has been used in the drainage districts of Ontario.

This proposed method of development is quite new in Alberta but has made very rapid strides during the past three years, no doubt due, at least in part, to the psychological effect of the last three very dry years which have been experienced. The Taber Irrigation District which will irrigate 17,000 acres as an extension of the C. P. R. project near

Lethbridge will complete its construction and have water on the land this year. Four other irrigated districts, including the Lethbridge Northern which will irrigate over 100,000 acres and has received a good deal of publicity of late, have been duly erected, and three more districts are in the course of erection.

These districts cannot make much further progress towards construction until they are successful in interesting capital to buy their bonds and advance them money to build with. It is recognized that the present with its unreasonably high cost of all construction materials and labor may not be a wise time to undertake the large construction work involved. But whether the proper time to construct be today or tomorrow, the western farmers who are on the lands would like the eastern manufacturers to investigate these new projects and become satisfied of their bona fides, so that when the time is ripe for construction their backing to these enterprises may be forthcoming.



# Colonization and Development in Western Canada.

Col. J. S. Dennis, C. M. G.,  
Chief Commissioner Colonization and Development, C. P. R.

Mr. Chairman and Gentlemen:

I am very glad indeed to be given an opportunity this morning of taking part in the Second Annual Meeting of the Alberta Industrial Development Association, particularly in view of the fact that this session of the Association is being attended by such a large representation from the Canadian Manufacturers' Association, an organization which represents our present industrial development in Canada. I hope that their visit to the West and attendance at the sessions of this Association will result in their becoming seized with the importance of the question of the further development of our natural resources and of their throwing the great weight of their organization behind our efforts to reach that end.

At the session of this Association held in this City last year, I had the privilege of speaking on the subject of the Undeveloped Natural Resources of Western Canada. Today, I must again refer in a general way to these resources, but I want to speak to you more particularly of colonization and development, the only medium through which these resources can be made productive.

I assume that I was honored with the invitation to address you today on this important subject owing to the fact that my residence of forty-eight years in the West and my work during that period in the services of the Dominion Government, the Hudson's Bay Company, the old Territorial Government and the Canadian Pacific Railway Company has given me a somewhat wide knowledge of the location and character of our natural resources and the methods we must adopt to secure their further development.

In my address last year I dealt in detail with the undeveloped natural resources of agricultural land, timber, coal, natural gas, petroleum, fisheries, base and precious metals, with which Nature has so lavishly endowed Western Canada. Today my desire is to try and put before you briefly the manner in which these resources can be made productive through the medium of colonization and development.

Colonization is the most important problem with which we are today faced in Canada. By colonization I mean, not only the obtaining

of the farmer to cultivate our vast unoccupied areas of good agricultural land, but the increasing of our population by the immigration of desirable citizens who will undertake the development of all our other natural resources by providing the necessary capital and labor. Development is not possible without additional capital and labor, and these can only be provided through the medium of increased population secured by proper immigration and colonization efforts.

We are naturally proud of the fact that our participation in the late war has given Canada a standing among the nations of the world and that today the name "Canadian" is recognized as distinguishing a citizen of a progressive and virile country, but our share in that great struggle has involved us in financial obligations which can only be met and discharged by increasing our population and developing those natural resources which, while potentially ample security for many times our national debt, can only be made productive of wealth through development.

It is not possible to quote any definite figures as to the total population of Canada until completion of the 1921 census, but assuming that the published estimate of 8,500,000 is somewhat near the mark, it will be of interest to note our immigration returns for the past fifteen years. The total immigration for the period 1906-1914 amounted to 2,530,799, and for the period 1915 to end of 1919, to 503,197. The falling off in the latter period was, of course, due to the war, but the figures quoted will serve to emphasize the necessity for speeding up our immigration and colonization activities if we are to reach the total of an increase of, at least, 500,000 per year, which is certainly the minimum we should aim at.

The larger proportion of the immigration to Canada during the fifteen year period above referred to has been to the four Western Provinces of Manitoba, Saskatchewan, Alberta and British Columbia, and basing my estimate upon the census taken in these Provinces in 1916, it is safe to assume that they now have a total population of two and one half million. What have we to offer the prospective immigrant to Western Canada to justify our expectation of a marked movement of desirable colonists to these Western Provinces this year and a rapidly increasing number from year to year until our population reaches at least ten million?

What we have to offer, as I see it, in the order of their importance are as follows:

#### Agricultural Land

In the four Western Provinces we have an area of at least 225,000,000 acres of good agricultural land. Of this vast area, not more than 35,000,000 acres are at present occupied and cultivated, and of the balance of 190,000,000 acres of unoccupied land, 30,000,000 acres lie within

fifteen miles on each side of constructed railway lines. Think of it, thirty million acres of good and cheap agricultural land lying idle within fifteen miles of our constructed railway lines in the West and the World crying out for food. Do we need any other excuse for an active colonization policy?

The suitability of our vast unoccupied areas for successful agricultural, horticultural and animal industry has been conclusively proved by the prizes won in competition with the world for our grain, fruit and livestock, the product of the occupied areas of these four Western Provinces, and we can therefore confidently assert that at the present time Western Canada offers to the land seeking colonist an opportunity to obtain good land at a low price within reasonable reach of transportation facilities, which does not exist any where else in the North American Continent.

#### Coal

The question of fuel available for domestic and industrial use is, of course, a vital matter in the development of any new country and is of primary importance in Western Canada where such a large part of our agricultural areas consist of open prairies. Fortunately in this matter Nature has been exceedingly kind to us. The Provinces of Saskatchewan, Alberta and British Columbia contain about 17 per cent. of the known coal resources of the world, and these coals cover all the different qualities from lignites to bituminous, bituminous coking and anthracite. The Province of Alberta alone contains coal resources to the enormous extent of one thousand and seventy-five billion tons, and these facts will indicate that without depending upon the fuel obtainable from the natural gas and timber, referred to later on, our coal requirements for domestic and industrial needs are taken care of for many centuries to come.

#### Natural Gas

During your trip so far through this Province, you have had some opportunity of seeing something of the natural gas development, but it may interest you to know that natural gas has been developed in the Province of Alberta within an area extending from the national boundary North for about 700 miles and from the Rocky Mountains East for 200 miles.

This natural product is now being utilized both for industrial and domestic purposes, and the possibility of its extension as a fuel in generating heat, light and power is almost beyond measure.

You no doubt will also be interested to know in connection with our natural gas supply that we are at present producing gasoline from it and the opportunities of extending this feature of development, so as to increase the supply of this widely used fuel for power purposes, are

very marked. It is also interesting to note that investigations have proved the possibilities of extracting from our natural gas the character of gas required for use in balloons.

Associated with our vast coal and natural gas areas, referred to, it may, in my opinion, be accepted that Nature has also blessed this Western country with a vast deposit of:

#### **Petroleum**

It is true that we are not justified at present in claiming that we have located and developed this vast oil field, but the exploratory work so far carried on over an area extending some 700 miles North to South in the Province of Alberta, and at one or two isolated points in the adjacent Provinces of British Columbia, and the oil obtained in small quantities at these widely separated points, justify the assumption that somewhere within the Province of Alberta there exists one of the vast deposits of petroleum of the globe, and I personally venture the opinion that, sooner or later, and in all probability in the near future, a large producing oil field will be located through the medium of some of the many test wells that are now being drilled at widely separated points, and when that time comes we will not only have the great addition to our fuel supply but the benefit of the vast number of by-products resulting from the scientific use of crude petroleum.

#### **Timber**

Timber has always played an important part in assisting in the development of new countries. This is particularly true of the prairie portions of Western America, where the first need of every settler is lumber. In this particular, Nature has again been exceptionally kind to the four Western Provinces of Canada, for while the prairie provinces of Manitoba, Saskatchewan and Alberta produce a certain amount of lumber, the lumber needs of the prairie districts of these provinces could not be filled were it not for the vast timbered areas of the province of British Columbia. That province differs from its three sister provinces to the east in that it is more or less mountainous throughout and only in the valleys is there opportunity offered for agriculture, horticulture and animal industry, but the Province possesses one of the great undeveloped timber areas of the World. Conservative estimates indicate that the commercial standing timber in the province of British Columbia amounts to 366 billion feet. This timber comprises cedar, Douglas fir, spruce, hemlock, white fir, lodgepole pine, western yellow pine, yellow cypress, western larch, western white pine and cotton wood.

This vast timbered area has already been developed to a certain extent through the medium of sawmills and allied woodworking indus-



tries, but the extension of this portion of our industrial activity will offer opportunities for a further investment of capital co-incident with our extension of agricultural settlement east of the mountains and of our overseas export lumber business. There would also seem to be an opening for the extension of our wood pulp and paper making industry in view of the present great demand for paper and the vast quantities of suitable pulpwood to be found in all these four Western Provinces, and in this way ensure that this product will be manufactured at home instead of being exported as a raw product in the shape of pulpwood.

#### Clay and Clay Shales

At Medicine Hat you had an opportunity of seeing one of the large industrial plants engaged in utilizing our clay deposits. Throughout all the four Western Provinces vast deposits of clay suitable for the manufacture of products have been located, and the utilization of these deposits, varying from common brick to fine porcelain, offers opportunities for wide development extension.

We have also been able to demonstrate the suitability of certain of our sand deposits in the West for the manufacture of glass, and where these deposits are located in close proximity to our natural gas supply this industry offers an opening for wide development.

#### Fisheries

The many large lakes situated in the Province of Manitoba, Saskatchewan and Alberta provide large quantities of fresh water fish, but our great fishery resource of Western Canada is on the Coast line of British Columbia. This coast line covers in extent some 7,000 miles and may reasonably be claimed to provide one of the great fishing industries of the world. This industry has already been developed to considerable limits as will be indicated by the fact that the catch of eight kinds of fish during the year 1918 amounted to 233,000,000 pounds, valued at \$22,000,000. The export of a large quantity of this coast fishing industry, together with fresh water fish from the interior lakes, comprises one of our important industries of the West, but like many other phases of the development of our natural resources is only in its infancy.

#### Iron Ore

With unlimited quantities of coal and natural gas as fuel, and the probable addition of crude petroleum to the list, it was only necessary for Nature to have blessed Western Canada with a large deposit of iron ore to insure her future as one of the richest countries of the world. In this particular, however, Nature seems to have been somewhat sparing in her gifts. We have indications of deposits of iron ore in the

Lake Winnipeg of Manitoba, some smaller deposits in the Provinces of Saskatchewan and Alberta, and probably more important deposits at several points in British Columbia, but as yet, sufficient development has not been completed at any of these points to justify the prophecy as to how far these deposits can be utilized in connection with our fuel to supply the steel which is rapidly becoming one of the most widely used products in the world's development.

#### **Base and Precious Minerals**

The Province of British Columbia to the West of us is now recognized as one of the most highly mineralized areas in the Continent and the production of both base and precious minerals has already reached important figures in our national wealth. Vast areas of that Province, however, yet remain to be intelligently prospected and developed. We now know that extensive areas in Northern Manitoba and Saskatchewan are also precious and base mineral bearing and further development in those and other areas to be prospected will, without doubt, further extend our important mining industry in the West.

#### **Transportation**

The rapid development of any country is dependent upon transportation facilities. In this matter, the four Western Provinces of Canada stand in an enviable position. Today, we have a greater mileage of railway per capita in operation than in any other country of the world.

In the Provinces of Manitoba, Saskatchewan, Alberta and British Columbia there are at present 19,873 miles of railway in operation, or one mile for each 110 persons. This fact should bring home to us all the vital importance of straining every effort to make productive through the medium of colonization and development our dormant natural resources, and it may be confidently asserted that unless we can, through this medium, rapidly and materially improve the existing conditions, many miles of these operated railways are not going to show profit for some years, and the satisfaction of having this exceptional mileage of operated railways and of being able to point to our unequalled transportation facilities will be dulled by having to pay operating deficits through the medium of taxation.

Having, in the foregoing brief manner, outlined to you our position in Western Canada and what we have to offer to the capitalist, the laborer and the immigrant looking for cheap and good agricultural land, how are we, through the medium of colonization and development, going to make these great undeveloped resources known to the rest of the world, and in this way stimulate their development?

In my opinion, what we need is more co-operative and concentrated effort on the part of governments, corporations and individuals if this

problem is to be met and solved in the near future. In this connection it is, I am sure, gratifying to us all to note that the movement which originated with this Development Association last year has now resulted in the organization of the Western Canada Colonization Association which is receiving such handsome financial support from representative citizens and corporations all over Canada.

Assuming that meetings like this we are holding today, the organization of the Western Canada Colonization Association and more co-operative and aggressive action on the part of the governments and corporations results in the adoption of a broad and comprehensive policy of colonization and development, where are we to direct our efforts to secure the Capitalist, the Agriculturist and the Laborer which we need if results are to be obtained?

Of the two and one half million immigrants to Canada in the period 1905 to 1914, to which I have already referred, 974,000 came from Great Britain, 875,000 from the United States and the balance from other countries. Our immigration during the war period 1914 to 1919 of half a million, also previously referred to, was divided 125,000 from Great Britain, 311,000 from the United States and the small balance from other countries.

These figures serve to indicate the countries to which our new efforts to obtain immigrants should be specially directed. We must realize that the war has created conditions in Great Britain and Northern Europe that must seriously affect the movement of both capital and people from those countries for some time, and our special efforts should, therefore, for the present be confined to the United States. We know that following every modern war in Europe there has been an increased movement of people to this continent and can feel assured that so soon as conditions become more stabilized, and the exchange conditions more favorable, we can expect a very large movement of both capital and people from Great Britain and Northern Europe to Canada, but, in the meantime, we must follow the line of least resistance and stimulate the already large movement of both capital and population from our Neighbor South of the International Boundary. We have the opportunity for the capitalist, the land hungry settler and the laborer looking for new opportunity, they have the men and the money, and every inducement should be offered to stimulate the movement from South of the Line of the capitalist or settler who will help us to speed up our colonization and development.

We may confidently assert that at the present time Canada and its opportunities stand out in the minds of the people of Great Britain,

Northern Europe and the United States as a country of opportunity for the capitalist, the skilled mechanic, the ordinary laborer and the land hungry settler, but there is a lamentable apathy on the part of our governments, corporations and citizens generally to the vital and pressing importance of making our opportunities better known and of dealing aggressively and on broad lines with this question of colonization and development, the only medium through which our Dominion can be made, which in my opinion it is destined to be, the keystone in the arch of British Empire.



# Canada Versus other Open Spaces of the World--A Comparative Study.

Dr. H. M. Tory,  
President of the University of Alberta

Mr. Chairman, Ladies and Gentlemen.

I feel especially honored at being asked to speak to this delegation, assembled as it is from all over Canada, and especially as the topic that I have been assigned is one of general interest rather than of special and particular interest to the Province of Alberta.

I think, in some measure, the fact that I have been asked to speak to you is a sign of the times in the sense that we are living in an age when men are looking for knowledge and seeking to act in the light of knowledge and experience in a way that they have never done before. Whatever else of good the war brought to us, there are we who believe in education as the fundamental thing in a nation's life and greatness, and that it has brought a thirst for knowledge unknown before in the English speaking world.

We are a very practical people, we Anglo-Saxons, and we have been very much inclined in the past to live from day to day, giving not very much thought as to what the future is to be, but believing that if we do the day's work well, the future will take care of itself, and in the main, one is not inclined to doubt this philosophy of life very much. I think it is this philosophy that helps keep an optimistic spirit. The war has taught us that it is advisable for us to have an organized knowledge of our resources, to think in terms of what we have, and it has also taught us that that nation is wise that has thought out and adopted a programme for the orderly use and development of its resources. And so it was suggested that I might talk on "Canada," thinking of it largely in a comparative way to the other parts of the world in competition with Canada, and who for the last fifty years have been measuring strength and development and cultivation of resources with Canada.

Now, there are certain things that, it seems to me, we should bear in mind, and that is this: the habit of constantly cultivating certain things absolutely necessary for the development of a stable civilization. Certain things depended in the past on superficial conditions and passed away, the permanent rested up certain distinctive things that must be obtainable and therefore, when we speak of the future of Canada in competition with the United States of America

and others, we think of the things that tend for stable, continual growth and development.

Let us refer first to the white civilization because it is in the terms of the modern western resources that we are thinking. Climate has always played a very important part in the development of a country. There are certain regions in the world where white men cannot live and raise their families; that is, they cannot remain there permanently without a check. For example, a white man would have a difficult time living in India. The Anglo-Saxon in India is a Governor; he is at the head of organizations; he is in control of large industries; but he is not found a worker doing the ordinary work of the world; and India can never be an Anglo-Saxon's country in the way that we mean when we speak of Great Britain, Canada or Australia.

You cannot form a permanent footing, for instance, on the development of the mining industry, for the reason that sooner or later the mines would run out, with the consequent removal of the inhabitants to other sections. I mention this because we must have an agricultural basis for white civilization.

Now, when we come to compare countries of the immediate future in competition with Canada, let us first refer to India. As far as the development of a white colony is concerned. India is not in competition with Canada, I mean as a country where men come to settle, to make their home, and to carry on the ordinary work and industrial life of a community.

Then I will take another great country in competition with Canada—Australia. Australia has a little over one-half of the population, and an area somewhat equal to that of the Dominion of Canada. When you think of the large sections of Canada belonging to the frozen north, you immediately think Australia has a distinct advantage over us; but I might say what we have lost in northern latitude, Australia has more than lost by her arid zone.

Many more details might be related, but the fact remains that in point of climate, Canada has an advantage over a country like Australia, and even in these days of easy transportation, the distance, say, from Central Europe to Australia is too great as compared with Canada. Men desiring not to go too far from home, and Canada has a distinct advantage as compared with Australia, in being nearer to the Central European countries.

Might I now compare Canada with South Africa, extending over a vast territory. After all, Ladies and Gentlemen, there is really no comparison between Canada and South Africa from the point of view of the ordinary worker. South Africa in the sense in which I speak of Canada, is not a white man's country. I just paused to look up figures for a country like Rhodesia. The area of Rhodesia

is 450,000 square miles, double the size of Alberta, and the population is almost an entirely native black population. It is a country where large ranchers, mining prospectors, men capable of handling big enterprises will find a home, but we will not find there the settled conditions which make for permanence in our own country; and for many years Rhodesia will not become a white man's country.

And then I will take German East Africa for comparison with Canada. After all the years that Germany has occupied German East Africa, it still remains with a population of 2,000 whites and eight to ten million blacks; and for the next fifty years the competition that Canada will have from that occupied territory will be practically nil. There will be mining development, and there will be development of great rubber plantations, requiring limited numbers of white men, the work being done not by white men but by black men. And white men will not seek such places except a few adventurous spirits that like to get away. So that I regard it, at least for the next fifty years, as not seriously in competition with Canada from the point of population and settlement.

And so with Mesopotamia. Her agriculture, mines and other resources will be developed by British ingenuity and brain. British people will draw large incomes from the great enterprises that will be developed from agriculture, but the country will not be settled by white men, and the work will be done by the present inhabitants that occupy it.

If we go outside of the Empire, the Argentine offers an outstanding example of a country with which Canada is in competition. But the Argentine is not likely to be a country from which men from British and Northern Europe will go in large numbers. It is a foreign country, without a settled government, and the Argentine will prove attractive to Southern Europeans rather than Northern Europeans. Since the Argentine was opened to immigration about thirty years ago, there has been two million Italians, mainly from Southern Italy, and only between thirty and forty thousand British go there. So that I think we may safely believe that the Argentine will attract people from Southern Europe, the men who do not fit well into our Canadian life.

Now let us compare Canada with the United States of America. The story of the trek of the white man across the continent by means of horses, carts and the simpler means of transportation will be one of the romances that history will record. People of this age are too near its history to appreciate all its wonders.

The United States has a population of 110,000,000 people. I do not hesitate to say that once the U.S.A. settles down to a real economic and scientific development of her resources, she will be capable of easily supporting and feeding a population of 500,000,000 people.

Years ago men were very much concerned about the food supply of the future; that the time would come when men would starve to death; but modern civilization has gone ahead so rapidly that it has learned to economize its own resources.

Now we have this advantage over the United States: that instead of people going to the United States from Canada, the future will see many Americans coming here.

America has 800,000,000 acres regarded as arable land. Canada has about one-half the arable land of the United States, but practically all the arable land in the United States is at present under cultivation, while the arable land in Canada has, as yet, only been touched.

Canada's effort in the war also placed her in a new light so far as the world is concerned. Before the war the general idea of outsiders was that to be a Canadian was to be an American. All this has now disappeared, and the entity of Canada stands out with a solidarity that will play a great part in future development. From the standpoint of climate and agriculture, Canada has little to fear in competition with the United States.

Just think of this for a moment: The German Empire before the war had 200,000 square miles of territory—little less than half the area of Alberta, and that territory was occupied by 66,000,000 people who were self-supporting. There is no doubt that before the war Germany had attained a very high industrial development, which resulted in her producing between seventy-five and ninety per cent. of the actual supplies required. This factor was responsible for the large numbers of men available for the purpose of conducting war. Germany should have been starved out by 1917; and had she not been wise in her plans she certainly would have been starved out in 1917.

France is a country with great possibilities. With an area less than Alberta, France supports a population of 17,000,000 people, living principally from agriculture, and the balance on industrial development. Now, when you compare that with what the Dominion of Canada has and think of what our vast agricultural area is now producing, how vast will our chance for development of possibilities be with our untouched . . . all occupied?

Then I think I need only speak of one thing. We, as a people, are rather staid, rather slow-going, fairly good natured, not over-progressive, but with agricultural development pushed to the fore, we will be the equal of any in the world, and if a future demonstration of that question was necessary, the record that the Canadians made in France is proof for all time that the people of this country lag behind none in the qualities of courage and self-sacrifice, organization and those general qualities of character that make for a virile nation.

In spite of all our railway difficulties, we have our transportation



system developed and organized. We are 25 years ahead of South Africa, 25 years ahead of Australia, 50 years ahead of Mesopotamia, and I do not know just how far ahead of German East Africa, and away ahead of the Argentine. We are fortunate that we have a transportation system developed which gives us an opportunity to get our products out. And if Western Canada had not her railways at this time, the possibility of getting them within 25 years would be very small, and they would cost at least 100 per cent. more for their construction. Whatever the annual deficit of our railways, the good we derive from our transportation system more than equalizes this.

I want to tell you men from Eastern Canada that we have here one-fifth of the arable land of the Dominion; fifty thousand square miles more land than the German Empire had before the war, with natural resources equal to the natural resources of the German Empire, although undeveloped, and I believe that this Province with normal development could support from thirty to fifty million people.

We have fourteen per cent. of the total coal area in this Province; eighty-six per cent. of the total of Canada is found here, and we hope that you will be sufficiently patriotic to assist the people of Alberta to supply Alberta's coal to meet the needs of Eastern Canada.

I would like to make this one final remark, and that is in connection with our schools: if there is anything that we in Canada, and I think that in this we in Alberta are not lacking, is in the establishing of great schools in our towns and villages for the development and education of our children.

I thank you.

# Banking and Reconstruction.

H. B. Mackenzie, Esq.

Asst. General Manager Bank of Montreal.

Mr. Chairman and Gentlemen:

Let me, in the first place, express to you the pleasure it gives to me to be present at this gathering, and to have the opportunity of saying a few words on subjects which are at present attracting wide attention. In speaking of banking and reconstruction, it is not my intention to cover the foreign field, but merely to make a few observations on the present situation in Canada with regard to these matters, and some comments upon the outlook.

The end of the war has left a number of European countries in an impoverished position, while others, not quite so badly off, are still faced with very grave difficulties. In Canada we are happily more fortunate and the return to normal conditions will be accomplished more easily, provided the problems that arise in that connection are met by all classes of the community in the spirit of mutual goodwill. There is no reason whatever to feel dejected over our national outlook at present, but there is plenty of reason for being soberly thoughtful.

I am not going to burden you with statistics, but I would like to draw your attention to some outstanding figures in the Government statements of our chartered banks. Comparing the figures of June 1914 with those of March 1920, the following increases appear:

Note Circulation from	\$ 99,000,000 to \$ 225,000,000
Deposits by the public	1,018,000,000 to 1,855,000,000
Current Loans in Canada	838,000,000 to 1,322,000,000
Total assets	1,575,000,000 to 3,061,000,000


These figures are, of course, a reflection of the great stimulus given to business by the borrowed money spent here by our own and the British and Foreign Governments during the war, but from the national standpoint, any gain they represent is more than offset by the increase in the public debt. The country as a whole is naturally not so well off as it was before the war.

We hear a great deal now-a-days about inflation, and there has certainly been a great inflation of debt, but when it comes to the question of currency, there is a difference to be noted. The term "Inflation of the Currency" has sometimes in the past been applied to the vicious practice adopted by embarrassed governments of paying their way in their own discredited and irredeemable notes. In these cases the notes

were forced upon an unwilling public but there has been nothing of that kind in Canada. Bank notes and the legal tender notes of the government have simply been issued in response to the general requirements of an increased volume of business in a period of rapidly rising prices and wages. People are merely doing as they have always done, i.e., carrying the amount of currency required for the current needs. The currency has not been pushed out and there is no bar to its redemption, and it has suffered no loss of value through distrust of its soundness. It is right, therefore, to keep in mind that, while the amount of bank and government notes in circulation has largely increased, there has been no inflation of our currency in any discreditable sense.

The bankers in Canada have been complimented and I think fairly, upon the way they have handled the successive problems which arose during the war, but perhaps the times upon which we now seem to be entering, may prove a more severe test of their prudence and ability. When prices are steadily rising there is little risk in making loans; business people are all prospering, failures are few, and the goods that the merchant buys with the bank's advances, and from the sale of which he expects to repay, grow in value as they lie on his shelves. While these conditions last, losses are seldom serious.

Following the outbreak of war there was a general confusion and hesitation in business for a few months, and for a short period there was even fear in this country of slack trade and unemployment. That situation, however, quickly changed; a demand sprung up for goods and in a short time a rise in prices began which continued until the armistice in November, 1918, accompanied naturally, by a corresponding rise in wages. Each new government loan, each increase in bank credits, gave new life to the movement in which wages and prices acted and reacted upon each other constantly ascending spiral. When the armistice came, there was a brief period of hesitation, and for a few months prices showed a decline but it did not last long. The momentum gathered by the upward movement during four years had not exhausted itself, and prices and wages resumed a rise which has continued until the present. It was obvious that this could not go on indefinitely, but it was not so easy to find a means of checking it. Bankers in the United States and Canada have now, however, adopted practically a uniform policy of putting a stop to the further expansion of credits and confining advances to the actual requirements of the business of the borrower. Those desirous of still further extending their business on borrowed money now meet with no encouragement. This policy is believed to be not only in the best interest of both borrower and lender, but also necessary from a national standpoint as a first step in the return to more stable business conditions. Every one concerned is probably aware of it by now and it has been, in the main, accepted by borrowers with good grace. It may be that this policy of restriction is the cause of some recent breaks in



prices and discount sales; it may be that they are coming anyway; at all events they happened to coincide. Whether we have now reached the peak of high prices or not is uncertain, but if we are not at the peak, we must surely be close to it, and then we shall have to face the more trying experience of coming down on the other side.

During the war the world was destroying and consuming an abnormal quantity of goods and turning out an abnormal quantity of promises to pay in settlement. Inevitably prices of goods went up, and promises to pay became cheap. Destruction has now, for the most part, ceased, and, in a large measure also, the borrowing, and with increasing production it is only natural that we should witness the reverse process. We cannot expect to enjoy the same measure of prosperity both going up and coming down, but with co-operation amongst all classes we can perhaps manage at least to come gently down.

It is expected in some quarters that until production overtakes demand, there can be no permanent fall in prices, but perhaps this view does not sufficiently recognize the difference between "demand" and what economists call "effective demand" that is, both ability and willingness to buy. There has not been, in the memory of man, such lavish waste of money as in the last few years, and those who have been making and spending more money than ever before, and who have no vision, would, perhaps, like to see it go on, but effective demand may be seriously curtailed through diminished purchasing power. Every one will agree that the stimulus to business and the greatly augmented purchasing power of our people in recent years has been due to the annual expenditure here by our own and the British and foreign governments of hundreds of millions of dollars of borrowed money, for supplies required to carry on the war. We are still in the after-glow of this unsubstantial prosperity, but surely the cessation of all that abnormal expenditure will, before long, be felt in our economic life, and reflected in a curtailment of the purchasing power of our people.

Then as to the willingness to buy—during the war years people who waited six months to buy anything found they had to pay more for it, and ever since that idea took firm hold, merchants and the public have continued to buy freely, but when the conviction becomes general that the dice has turned, the tendency will be to buy sparingly—a perfectly natural reaction which will operate to depress prices just as free buying operated to raise them. Possibly this conviction will lead also to the practice of that economy in personal expenditure so much advised and so little followed in the years just behind us.

We hear on all sides that we shall never see pre-war prices again; perhaps not, but "never" is a long time. Most of us can remember that the agitation in the United States for the free coinage of silver was based upon a grievance of the farmers, who complained that they had

to pay off with wheat at 65c a bushel, mortgages, contracted when wheat was \$1 a bushel. It was then confidently asserted that we should never see dollar wheat again, but we did see it and before the war. Let me give you a brief quotation from the Economic Memorandum prepared by the Supreme Council of the Peace Conference during their recent session in London. Here it is:

"In the Napoleonic wars, prices in England rose 75% and took eight years to become normal again. In the American civil war, American prices rose 100% and took twelve years or more to become normal."

Perhaps, in the light of these facts "never" is too strong a word.

Under existing circumstances bankers have properly become more than usually cautious because, as to the great bulk of the resources they administer they are merely trustees and bound to remember that they are advancing money placed by other people in their care. They are naturally not always able to see eye to eye with would-be borrowers, and I am far from claiming that their judgment is always and of necessity right. Experience, however, has taught them certain guiding lines, for instance—that their advances should in the main be made to business people for the legitimate purpose of, their business and with a source of repayment in sight from liquid assets. There are, of course, other classes of legitimate loans, and exceptional transactions justified on their individual merits, but a prudent banker has a strong leaning towards liquid assets. In speaking of business people, I include also, of course, the farmers whose legitimate requirements for purposes of production are recognized as sound banking business, and the farmers are in fact the principal borrowers at the small branches in the Prairie Provinces.

Let me just add that bankers have an equal interest in all sections of the country, and in all classes of the community. Their interests and their services extend to all sections and to all classes alike, and if I may make local reference, I am satisfied a fair investigation would show that these Prairie Provinces are as well served by the Canadian banks as any similar district in any part of the world.

We are living in a rather unsubstantial state of things just now, and we all want to get back to earth with the least possible disturbance. It is, perhaps, inevitable, in a free democracy like ours, that, during the period of re-adjustment there will be out-spoken differences of opinion between one geographical section of the country and another and between one class of the community and another. No one can say when, or in what shape, these differences will arise or how formidable they may be, but we can, at all events, make up our minds in advance that, in the interests of the whole country, sectional or group differences should not be allowed to disorganize our community life, but should

be settled in friendly conference. I had the privilege last September of attending the Industrial Conference at Ottawa, where employers and employees met for a frank exchange of views and in an endeavor to see how far these could be reconciled. They did not reach common conclusions on all the topics discussed (it is hardly to be expected that they would) but they did on a good many, and I think everyone who attended that conference was impressed with the excellent spirit in which the discussions were carried on, and came away feeling that it had done a great deal of good.

It will certainly smooth our path back to normal conditions if there can be developed in the minds of all Canadians a strong sense of national unity, a clear idea that whatever their racial or vocational or class affiliations may be, they owe a common and a higher allegiance, a paramount allegiance, to the Dominion of Canada. Against the development of this idea of national unity will be found the class-minded man and the class-minded group, who find it difficult to think and plan except along the line of what seems to be their immediate and personal advantage, whose first enquiry on any question is always, "What is there in it for us?" Please do not misunderstand me; I am not suggesting that the guiding principle of our business and public life should be self-sacrifice, however, much might be said for the principle. I am afraid humanity is not yet sufficiently altruistic to make that practicable and it is human nature that we have to deal with. Self-interest will probably continue to be the mainspring of human endeavor but an enlightened self-interest is, after all, not such a bad thing, for if each citizen knew what was really best for himself individually, and always did it, many of our troubles would disappear as if by magic. It is blind self-interest that is the danger, and the remedy is the spread of the actual truth on business and political questions, and the finding of some effective means to quicken the public sense, not only of the mutual advantages, but also of the mutual responsibilities of community life.

It is safe to say that a large number of differences of opinion are susceptible of amicable arrangement if each side takes the trouble to make a fair investigation of the other side's point of view. Unfortunately it usually happens that, on both sides, there are irreconcilables whose heated and extravagant statements confuse the public sense of right and wrong, and inflame grievances susceptible of amicable adjustment if approached in a spirit of conciliation. If we could only get rid of the irreconcilables, it would be infinitely easier to bring moderate people together but I fear it is too bright a hope to cherish.

The labor disputes of recent years have, however, shown that public opinion is becoming a very powerful factor; the strike that has the sympathy of the general public is already half won; the strike which lacks, it is almost sure to fail, and the general spread of knowledge is



all the time making it more difficult to mislead people in any country where the standard of education is so high as it is here. All this means progress towards a better state of things. The great bogey of the world today is Bolshevism and it thrives best amongst the ignorant. All kinds of means are suggested to defeat it, but perhaps the surest of all is to awaken in the public mind an idea of citizenship, alongside of which Bolshevism simply cannot live.

In the spreading of correct information on controversial subjects the Canadian Clubs can, perhaps, perform useful service as a sort of forum in which both sides of any question of really national importance can get a fair hearing. There, if anywhere, the idea of national unity should flourish, and I have no doubt it does for the audience at the Canadian Clubs represent a high type of Canadian citizenship—I may say that the committee of the Canadian Club of Montreal, of which I happen to be president this year, recently had this matter under discussion. During the war we could think of little else but war, and we had many addresses which inspired and thrilled us. As a people, however, we now have to turn our attention to something distinctly less thrilling, but still exceedingly important—that is, the job of setting our house in order, and the problems that arise in that connection are naturally of great interest to every citizen. We do not wish to hear from demagogues or fire-brands, but we shall welcome the opportunity of listening to addresses from fellow citizens of good will and qualified to speak in terms of common sense and moderation on either side of any question of large public interest.

There is a wide-spread feeling that our national development has become a little one-sided of late, and we shall do well if we can contrive a more balanced growth; town and country keeping step in a steadily advancing prosperity, mutually helpful and mutually dependent. The balance, however, is a little out at the moment. Both in this country and in the United States there has been, for some years, a steady drift from the land to the cities, which it seems desirable to check, but very difficult so long as higher wages and shorter hours in the cities continue. I do not pretend to say what is the remedy. There has never been a time when the attractions of life on the farm seemed greater to those who do not live there. Rural telephones, rural letter deliveries, better machinery, better roads, motor cars; all these things might be expected to make farm life more agreeable than it was twenty years ago. As a matter of fact, however, the drift to the cities continues. We have heard a good deal recently about the farmer's handsome profits and improved styles of living, but the city dwellers show no inclination as yet to go back to the land and share in these good things. If the drift continues long enough, the undermanned farms may not be able to feed the overpopulated cities and hunger may drive people back to the land, but

statesmanship will perhaps be equal to finding a gentler means of restoring the balance. The encouragement of desirable immigrants of the agricultural class will, of course, help the situation and give us, for the time being, more people to till the soil which is our greatest need at the moment but if there is an underlying cause for the drift to the cities, immigration will only bring temporary relief.

In any immigration propaganda care should be taken not to overstate the facts about this country. Over-statement always does, in the end, more harm than good and the truth about any part of the Dominion of Canada is quite good enough.

The abnormal conditions under which we are now living did not arise in a day and they will not be cured in a day and the period of readjustment may prove to be a real test of our patriotism, but whatever differences may arise within our borders, it is most unlikely that Canadians will yield ascendancy to any section of the country or to any class. It is foreign to the spirit of our people that any citizen, or any group of citizens, should be submissive and dumb under a sense of injustice, and the right of individuals having common interests to form themselves into unions and associations for the more effective promotion and protection of those interests, is no longer seriously questioned. It is proper and in the line of progress that different sections of the country and different classes of the community should press for their honest rights by constitutional and orderly methods; but between that and taking short-cuts to what we may conceive to be our rights, lies all the difference between organized society and barbarism. There is not the slightest doubt that Canada will continue to stand for an organized society, and will continue to uphold the authority of our Dominion and Provincial parliaments and of our courts of law, and if there should come amongst us some of another way of thinking, we can only say to them "Friends, you are out of place here, but the world is wide".

In the development of our natural resources, it is very important to proceed only upon absolutely reliable information in order that discredit may not fall on the name of the Dominion, through losses made by investors in unsound enterprises. Our Dominion and Provincial governments and our universities maintain staffs for research work which render excellent service to the public but it has been, in recent years, increasingly difficult to hold such men in government employ, or at the universities, on the scale of pay provided. The temptations in the form of larger salaries obtainable outside are too great. From the standpoint of the individuals concerned, one cannot wonder at this, but from the national standpoint it is to be regretted because a high standard of efficiency in these research bureaus constitutes a valuable public safeguard against the adventurous promoter with his reckless statements, whose sole concern is his own personal profit and who cares little

whether he achieves it by developing the country's natural resources, or by exploiting his fellow citizens.

To those engaged in what are called our natural industries it sometimes appears that governments are overkind to other enterprises calculated to make the country self-supporting in a wider range of the necessities of life and in some instances they may be right, but I think the war has helped us all to realize that a policy, which cannot perhaps be made to square exactly with pure economic theory, may yet be prudent from a national standpoint if due regard is paid to present world conditions. When the war broke out it was certainly fortunate that Canada was not only able to send food to Great Britain, but had also hundreds of factories and thousands of machinists and other operatives capable of being turned at once upon the work of making war materials. All the world is not even yet the friend of the British Empire and the widely separated parts of the Empire cannot safely specialize at present on a few lines of industry for which they are peculiarly adapted and depend on getting their other requirements from outside. There is an economic standpoint which seems to take little or no account of the possibility of war but after what we have just been through, we would not like to feel too largely dependent for the necessities of life upon the good-will of even the most friendly of foreign nations. In a matter of this kind there are of course, reasonable limits to be observed and it is the business of statemanship to find them and to adjust them from time to time as circumstances may warrant but always and solely in the national interest.

The war has left us with a national debt of quite formidable proportions, the interest on which, and the payment of pensions, will be a heavy charge upon the Dominion, and to provide for these and the gradual repayment of principal, it is most important that our national production in all lines should be maintained at the maximum consistent with reasonable expectations of demand and that as a people we should cease extravagance and turn to thrift. We do pay lip service to these ideas, but there is often an atmosphere of convention and artificiality about it that is not inspiring.

The upheaval and dislocation caused by the war, have been so tremendous and so wide-spread that there is no precedent to guide our views as to the experience that await us, and there is much diversity of opinion as to the probable course of events, but we are favoured in possessing a magnificent country, rich in natural resources and an intelligent, industrious, and law-abiding population, and our long future is not for one moment in doubt.

# The Water Power Resources of Alberta

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C. H. Attwood,  
Water Power Branch, Department of the Interior

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The Province of Alberta is peculiarly fortunate in having within its boundaries vast coal reserves and important water powers. If the investigation and exploitation of these two resources are properly co-ordinated, there need be no doubt about the fuel and power needs of the Province, as well as large areas of contiguous territory, being properly met. Owing to the nature, extent and location of the known coal areas, many important water power sites in the Province are for the moment not of immediate economic importance, so far as the development of power is concerned. It is probable, however, that with the increased cost of coal production, transportation and labor difficulties, etc., and with advances in the art of the development, transmission and use of hydro-electric energy, most of the water powers of the province will in time prove to be important factors in the fuel power problems of the West.

For several years past engineers of the Dominion Water Power Branch of the Department of the Interior at Ottawa, have been engaged in making a thorough examination of the water power resources of the settled portions of the Province. These examinations, supplemented by reconnaissance studies of the water powers in the unsettled areas and by the hydrometric investigations carried out by the Irrigation Branch, now the Reclamation Service of the same Department, have resulted in there being collected and collated at the present time, sufficient data to permit a fairly accurate and comprehensive estimate being made of the power possibilities of all the important power rivers of the Province. On certain rivers close to present settled areas, the Dominion Water Power Branch engineers have made very extensive surveys. On the Bow River, for instance, after several years of most thorough investigation, there was issued in 1914, a report by this Branch which indicates a fortunate situation with regard to power development contiguous to the City of Calgary. These surveys show that by storage and regulation it should be possible to develop sufficient horse power on the Bow River alone, to meet the ordinary central station needs of a population of 300,000 people.

Detail power and storage investigations have also been made on

the Elbow, Red Deer, Saskatchewan, Peace and Athabaska Rivers. while much data relating to the smaller streams have been collected. Investigatory survey work is being rapidly extended to cover all the power rivers, and it is confidently expected that within the near future, there will be available satisfactory data regarding every river in the Province.

Concurrent with, and continuously correlated to the power investigations, has been the work of gathering stream flow data, carried on by the Irrigation Branch (Reclamation Service), of the Department of the Interior. Run-off data for all the more important streams throughout the Province is now available, and has been invaluable in preparing the power estimates.

The water powers of the Province of Alberta are administered under regulations pursuant to the Dominion Water Power Act, 1919. These regulations provide for the exploitation of the water power resources in a way which will ensure the power needs of the Province being met to the best advantage in the public interest under full government control of rates, rentals, etc. These regulations absolutely prevent unwise or premature development of water power and provide for the permanent retention in the Crown of the ownership and control of the power project. Concessions are only made for limited periods to bona fide applications capable of prosecuting the development to a successful issue.

The policy of the Dominion Water Power Branch, is in brief, to encourage desirable development of water power resources; to discourage and prevent the initiation and development of uneconomic and wasteful projects; to ensure that each site developed shall utilize or provide for the future utilization of the maximum power available; to ensure that river systems are developed along comprehensive lines wherein each unit is a component link in a system; to compel the development of existing plants to their limit when the market demands, and to promote in every way the fullest conservation of the power resources of the West.

In order to appreciate the conditions pertaining to power development, a brief reference to the general characteristics of the Province is necessary.

The great variation between maximum and minimum runoff of the rivers in Alberta is due to the geological and topographical features of the Province, and to the temperature ranges. The waters of the southern and central portions of Alberta are collected by the North and South Saskatchewan Rivers and carried eastward to Lake Winnipeg, and thence by the Nelson River to Hudson's Bay; while those of the Northern portion are collected by the Peace and Athabasca Rivers and carried to the McKenzie River, and thence to the Arctic Ocean. These

ivers, together with many of their upper tributaries, have their source in the eastern slopes of the Rocky Mountains, and are fed from the glaciers and melted snows. As a result, floods occur during the summer months, while in the winter the flow is much reduced. Throughout the open prairie section, there is little inflow into the river systems during the winter season. The variation between the high and low discharges is accordingly very great and forms an unfavorable feature when water power development is considered.

The population of Alberta is concentrated chiefly in the central and southern portions of the province which area is traversed by the main lines of three transcontinental railways, together with several branch lines. With the exception of the power sites on the Bow River and the Rocky Rapids site on the North Saskatchewan River, none of the large power sites lie very close to either the railways or centres of population. In the northern portion of the Province the larger power sites are not at present easily accessible and are quite distant from any cities or towns.

In addition to its water powers, Alberta is provided with extensive areas of coal deposits, which at present provide a cheap source of fuel for power generating stations. Oil and gas have also been discovered and are being utilized in some parts of the Province. At the present time these fuel resources, in certain localities, can successfully compete with the water powers in the generation of electrical energy.

The water power developments in Alberta are situated almost entirely on the Bow River; the total turbine installation being 32,900 h.p. Of this amount 31,600 h.p. is installed in the two power plants of the Calgary Power Company on the Bow River at Horseshoe and Kananaskis Falls, and 780 h.p. is installed in the plant of the Calgary Water Power Company on the Bow River at Calgary. The Municipality of Lacombe have 200 h.p. installed in their plant on Louise Creek near Lake Louise. Three small grist mills west of Red Deer develop on an average about 10 h.p. each.

In the Province of Alberta detailed power and storage investigations have been made on the Bow River west of Calgary, on the Elbow River south-west of Calgary, Red Deer River, the North Saskatchewan River at Rocky Rapids sixty miles west of Edmonton, the Peace and Athabasca Rivers; and reconnaissance surveys on numerous other streams throughout the Province. From the data gathered by these surveys an estimate has been made of the undeveloped power available in Alberta. In estimating the power available only known power sites, or rapids and falls concerning which some information was available, have been included. In many cases power investigations have only been made on certain rapids or falls and have not yet been extended to cover the whole river. As the investigations are continued and later data be-



comes available, the power possibilities of these rivers may be included in the power estimate. Further investigations may also reveal the possibility of combining certain natural drops into one development, or of increasing the head stated at given power sites; all of which will have a tendency to increase the totals as estimated at present.

The extensive areas of known coal deposits and the immense coal reserves of the Province, lying as they do at the very threshold of the more important cities and towns, provide at present a cheap source of fuel for power generating stations. As a result the central station plants in the larger communities can offer to the consumer a low and very favorable rate.

In Alberta there is at present installed a total power of 75,500 h.p., of which 41,900 h.p., or 55.5 per cent. is steam; 32,600 h.p., or 43.2 per cent. is water; 1,000 h.p. or 1.3 per cent. is gas or oil.

The power available and the power rates in the Alberta cities at present is as follows:

Calgary—Steam, 14,500 h.p.; Water, 31,600 h.p.; Rates range from 2 cents to 3 cents per K.W. hour.

Edmonton—Steam, 14,500 h.p.: Power rates 3 cents to 1 cent per K.W. hour, less 10 per cent.

Lethbridge—Steam 5,000 h.p.: Power rates 6 cents to 2 cents per K.W. hour.

Medicine Hat—Steam, 5,000 h.p.: Rates 6 cents to 1 cent, with graduated discount. Peak loads basis \$12.00, \$18.45 and \$25.00 per h.p. year.

The steady influx of people to the cities and to the rural districts of Alberta, together with the rapid development of the agricultural lands, and the ever increasing utilization of the vast coal areas, is bound to create a heavy and growing demand for manufactured goods. This constantly increasing market for industrial products offers possibilities to the cities, in manufacturing lines, which the municipal authorities should be quick to realize. Undoubtedly the industrial growth in the province will be centred chiefly in the cities where cheap power and good transportation facilities can be obtained. When it is considered that the industry of the Province as a whole largely pertains to agriculture with a consequent dispersed population, it will probably be conceded that the chief immediate markets for power will be the cities and the mining centres. Calgary and Edmonton are within easy transmission distance of a limited supply of hydro-electric power, and are also in close proximity to numerous coal mines. To the north and the west of Edmonton are located the largest and most important power sites in the Province. While the northern country is as yet too unsettled to supply a market for the power, its vast natural resources await development; the proximity of extensive water powers to these resources

form an asset of exception value which will be realized in their development as the resources are exploited.

Alberta possesses an abundance of coal, most of which lies to the south of transcontinental main lines of the Canadian National Railways. It should be always kept in mind that under many circumstances power generated from coal-fired steam plants can successfully compete with hydro-electric power. In the interests of conserving these fuel resources of the Province, it is, however, desirable that the use of the water powers be encouraged by all means possible.

To sum up, it might be stated that Alberta is well endowed with water power resources whose development will eventually be of vast benefit to the industrial and commercial, as well as to the domestic life of the Province. The location of these undeveloped powers in respect to the present centres of population, are in some cases favorable to their early development. Each power site or prospect requires, however, individual consideration of all circumstances and conditions pertinent to its development before its economic value to the community can be definitely decided upon.

# The Land of Promise and Fulfillment.

R. C. Haskins

Vice-President International Harvester Co.

It is even more of a pleasure and a privilege to be with your Association this year than I found it last year. This time I find new gratification in witnessing how energetically your Association has carried forward its work and how it has broadened its scope; and there is a distinct and new pleasure in observing on every hand evidence of the substantial and sustained progress of Alberta and of all Western Canada.

My recollection is that when I was with you last year I made mention of the fact that I should not and did not feel like a stranger among you, for the reason that I am Canadian born. And, no matter how long he may live elsewhere, one does not, and cannot forget, or forget to care about the soil that gave him birth. I have visited Canada very many times and have never failed to experience the thrill that comes to a man's heart when he sets foot once more upon the soil of the homeland.

In picking the title for these remarks—"Western Canada—the Land of Promise and Fulfillment"—I must admit that I was chiefly inspired by a report which I recently heard made by one of my colleagues, Mr. A. L. Upton, Vice-President of the International Harvester Company of Canada, Limited. This report has since been reduced to printed form and, with the author's permission, I shall quote from it freely.

Of course Mr. Upton was thinking and speaking of the Canadian Northwest from the viewpoint of the Harvester Company, but I do not think that fact will affect the value of his remarks for this place and occasion.

The essence of my colleague's report was how magnificently the Canadian Northwest had justified the Company's faith in the farmers who pioneered this vast domain and achieved by far the greatest part of its development. He told how one of the Company's high officials had said long ago to the head of the Canadian sales organization: "Judge your credits by the land and the man. If the land can be made into a farm that will pay and if the man looks like a worker, the Company will take the risk." And then he went on to say:

"The soundness of that philosophy—for it is more than a policy—is very emphatically declared by the results. There have

been some lean seasons in the eighteen years of the Harvester Company's experience with Canada; two and even three consecutive drouths have occurred over considerable grain areas, leaving the affected farmers unable to meet their obligations, needing not only credit extensions and even moratoria, but more direct help so that they could 'carry on.' But always they have wanted to pay; they have always paid when they could.

"At one time, a few years ago, the Company's faith in the future and the farmers of Canada was represented by a total of notes, chiefly from the prairie country, that ran far into millions. Now that total has been reduced by more than half.

"In the beginning of the conquest of that wilderness cash was scarce; it always is in the pioneer period of any country. But, except for the effects of drouth in certain years, the Company's record of collections shows that the cash percentage has climbed steadily with the increase of agriculture and of farm prosperity. Putting it broadly, the farmers of Western Canada now can and do pay three dollars in cash on a four-dollar purchase, where fifteen years ago they could only pay one dollar down.

"It is justice to the Canadian farmers and justification of the Harvester credit theory in dealing with them to say that the losses written off in the last fifteen years represent only negligible percentage of the total volume of business."

From these quotations that I have just given you from my Harvester colleague's report, it seems to me quite clear that the Harvester Company is a strong witness to the fact that Western Canada is indeed the land of both promise and fulfillment.

And when we realize fully that the prairie provinces of Canada are but the northward extension of the great prairie country of the American Middle West, it is not difficult to forecast what promise they hold and what fulfillment they will render in the future. None of us doubt—and I will say to you that the Harvester Company never has doubted—that here will be repeated that miracle of development and progress already achieved in the prairie States of America—here one day will be, and not very many years from now—another land of magical yet substantial growth, of remarkable yet enduring prosperity.

I am quite aware that the aspirations of Western Canada as expressed and made effective by your Alberta Industrial Development Association have in view a good many other things besides agriculture—all of which is entirely logical and proper. Any community which has within it the natural resources of manufacture has not only the right but the obligation to exert itself for their development; and it has the further right and obligation to seek and to create the artificial resources and conditions of manufacture.

Now, while I have been associated all my working life with farm implement manufacture—have been for eighteen years a part of the great Harvester manufacturing institution—my associations and activities have always been on the selling and distributing side—therefore you will understand that when I touch upon the manufacturing side of Alberta's development it is not in any way as an expert—in that respect I have had no advantage beyond any of you, except perhaps by way of observation.

Among these observations, I have seen Chicago grow from a young, rude, crude city of less than half a million population to the rank of America's second and the world's fourth city; I have seen the last of the new grain lands of the Middle West brought under the plow, and have seen the older farm lands advance from primitive and pastoral phase of cultivation to a degree of agriculture that might almost be called scientific; I have seen such States as Illinois and Wisconsin, for example, enormously develop their agricultural prosperity and build up alongside of it a vast industrial prosperity—and, speaking merely as a layman, when it comes to manufacturing, it is my belief, amounting to a firm conviction, that without agricultural prosperity as a foundation these miraculous developments could not have taken place.

And applying the same logic to the future of Alberta and of Western Canada, I make bold to say—as I think I said to you last year—that the present great promise of this great prairie empire will find its rich fulfillment by and through agriculture and not in any other way.

The Harvester Company does not by any means believe that its part in the development of Western Canada is complete. Let me quote again from my colleague, Mr. Upton. In closing the report which I have mentioned he said:

"There is no intent in this presentation either to glorify the Dominion or to boast about the Harvester Company's relation to its agricultural growth. The purpose is to make it clear that here, in the last great area of virgin grain land remaining in North America, still lies a great duty and a great opportunity for the Harvester Company, as well as one of the great sources of the world's future food supply."

And when you no longer have any virgin grain land to bring under cultivation—when all your tillable acres are occupied and producing—the development of your agriculture will only have begun. After that will come the slower and more difficult business of making all your acres produce to their full capacity. You will still have before you the work of making agriculture a real business—of making every farm a factory.

One of the many lessons of the war, it seems to me, is about the importance of agriculture, especially to us in North America. For more than half a century—that is ever since the coming of the reaper—we had pretty well forgotten the meaning of the word "famine." There might be a crop failure here or a food shortage there, but there was always a surplus somewhere else, and no people or community really needed to tighten its belt very far. But when practically the whole world went to war, with millions of soldiers to be fed and with millions of men taken out of food production, and with internal and external means of communication crippled or destroyed—then we began to understand the importance of agriculture; we began to see that after all, the world's principal necessity is the finding of its daily bread and butter.

The United States, for all its standing as the workshop of the world, is still most important in the international economic cycle as a food producer. And even internally agriculture remains the greatest of all American industries—its farms are still its greatest sources of wealth, and agriculture and the secondary phases of food production still demand by far the greater part of its labor.

Last year I mentioned briefly the work that is being done in the American States for the development of their agricultural resources and the contribution to that work made by the Harvester Company's Agricultural Extension Department. At the present time this work has taken on a new importance. As you have doubtless been informed the United States, through the reaction of war upon all industry and conditions of living everywhere and upon transportation, suddenly finds itself confronting a failure of farm production that is apparently bound to be followed by a serious shortage of food. I read in my newspaper only the other day that so eminent an authority on the subject as Mr. Herbert Hoover had predicted a time in which the United States might find it necessary to bring part of its food supply from other countries.

Agencies of various sorts are exerting themselves to the utmost to cure the principal cause of this condition, which is a shortage of farm labor. It is to be hoped that the sum total of their efforts will prove an adequate remedy and that the shortage will not occur. But I was much impressed the other day by the opinion expressed by Professor Holden, head of our Agricultural Extension Department, on this subject. I want to pass along that judgment, to you men of Alberta and Western Canada, and to impress it as forcibly as possible upon your minds, because it is pregnant with value for you as well as for us in the United States.

"The shortage of farm labor," said Professor Holden, "is not going to be remedied by any migration, however induced, of people from the cities and the towns to the farms. It is a



condition that we Americans have brought upon ourselves through many years of unconscious folly and it will take many years to cure it."

The cause of this farm labor shortage, Professor Holde, said, was mis-education of our rural schools.

"Here is what we have been doing," he said. "for all the years of our common school education, we have been saying to the farm boy and the farm girl: 'go to school and study and get an education so that you won't have to slave and toil on the farm as your father and mother have always had to do.' We have used all the great power of our schools to educate and draw our sons and daughters away from the farm—and now we are beginning to pay the penalty."

Only in the last few years and in few places, has this important truth been realized. Only here and there has a start been made in teaching children in rural schools the possibilities of the soil, love of the soil and the true importance and dignity of agriculture.

I do not pretend to know what your farm labor situation is here in Western Canada, but it seems to me that you will do well to avoid the sorrowful error by which your American neighbors have brought themselves into a situation full of dismal possibilities. It seems to me that one of the activities of this Association might well be to examine into this question and to do whatever is necessary toward providing in the rural schools—or why not even in the city schools?—the kind of education that will turn the minds and aspirations of the people toward the soil and not away from it.

I have said that the Harvester Company regards Western Canada as the land of still greater promise and fulfillment for the future than it has proved in the past. Let me add that I believe that to be the thought of all Americans who have given attention to the remarkable development of the last fifteen or twenty years in the northern prairie empire.

As to those developments I shall quote again from my colleague, Mr. Upton:

"The school boy doubtless knows but the business man probably forgets," he said, "the vastness of Canada—forgets it is greater in area than the United States, including Alaska, but has a population smaller than that of New York, Chicago and Philadelphia combined. One half of Canada's people live in the cities and towns; the output of her farmers, forests, mines and fisheries is produced by a population that averages less than one person the square mile.

"The total area fit for tillage is placed at 302,200,000 acres, and of this only 51,400,000 acres, or about one-sixth,

was under crop in 1918. In Manitoba, Saskatchewan and Alberta, there is a total of 179,000,000 acres of arable land; in 1918 there were 26,000,000 acres under crop and 25,000,000 carrying live stock. There is room for settlers on 128,000,000 acres of survey and arable land, including 25,000,000 acres still open for homestead entry—an empire as yet untouched, awaiting the men and the plows to set free the wealth of its soil.

“One of the most notable developments in the last half century of the Dominion's life has been the shifting of the grain-growing centre from the eastern to the prairie provinces. The 1870 census showed that Ontario was producing 85 per cent., of the wheat, oats and barley; Quebec 12 per cent., and the maritime provinces 2½ per cent.

“It was not until two years later that the prairies began to be a factor in grain productions. In 1880 Manitoba came in with 3 per cent. In another ten years the westward movement had become significant. Ontario in 1890 produced 50.5 per cent., of the three grains, Manitoba 38 per cent., and the Northwest was on the board with 4 per cent. In the following decade Ontario held its own, Manitoba dropped slightly but the Northwest advanced to 8 per cent.

“By 1910 the domination of grain production had gone definitely and largely to the West, Ontario having but 15 per cent., Manitoba having fallen to 26 per cent., and Saskatchewan having risen to 51 per cent. In that year Alberta appeared for the first time in the census grain figures, showing 7 per cent., of the yield. In 1917 Saskatchewan produced 56 per cent., of the Dominion's wheat, barley and oats; Alberta 20 per cent.; Manitoba about 16.5 per cent., and Ontario only 5 per cent.

“These percentages, it should be understood, have to do with an important total production. The record grain year, 1915, saw a total wheat yield for the Dominion of 374,670,000 bushels and of oats 428,257,000 bushels.”

Those conditions make a notable foundation for the greater promise of Western Canada; they ensure the greater fulfillment.

Whatever else that fulfillment brings to Alberta and all Western Canada, it must include the agricultural growth which is the indispensable basis and accompaniment of true prosperity in a country like yours up here and ours down there in the American Middle West. I hope—and, I indeed, believe—that with the development of your resources of fuel, of transportation, of population, you will have many industrial factories, big and little. But I KNOW that you will have

thousands upon thousands of the best factories there can be—the farms factories that I suggested before.

By that I mean the ideal but entirely practicable stage of agriculture in which every farm is run like a business, like a plant. That, indeed, is exactly what a good farm is—a plant conducted on a business basis. We have not by any means reached that ideal condition in the United States, but we are definitely working towards it, and so must you—so WILL you.

I have read in one of Professor Holden's agricultural extension books that the average yearly loss on the farms of the United States is about five thousand million dollars—and all of it due to waste that can easily be prevented.

Half of that huge sum Professor Holden charges up to "depreciation of farm machinery and tools from failure to house or care for them; to soil depletion resulting from the one-crop system of agriculture; and to carelessness, neglect, shiftlessness—because we are in the rut."

The waste of manure is charged with \$100,000,000 of the needless loss, and weeds cost another hundred millions.

Obviously farming that prospers in spite of a loss as great as that is not businesslike, is not efficient, is not done on the factory plan.

Now I don't know enough about agriculture up here to say how well you farm, maybe your farmers are more thrifty and efficient than their farmer cousins down across the line—maybe you don't waste your manure; maybe you don't let your farm implements rust out in the rain and sun; maybe you have no weeds on your farms—but I suspect that there is room for improvement here, too, in farming methods.

Finally, let me say that I hope to have other opportunities to come up here occasionally and witness how your promise and my predictions are working out; I hope it may be my privilege to rejoice with you in greater fulfillment of your greater promise.

I thank you.

# Coal Resources and Oil Possibilities in Alberta.

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University of Alberta

The coal and oil resources in this province is a very large subject to discuss in any brief manner, but this subject has been chosen because the future development of Western Canada, to a large extent depends on the fuel resources of the country and their proper utilization.

A country to prosper must have industries, and industries must have fuel to carry on operations. Western Canada and particularly Alberta has the fuel reserves; she requires additional industries and offers large possibilities to the manufacturer.

The natural resources of Alberta are varied and valuable; some have already proven, and others will be proven in the near future, to be of a great national importance, but all of these natural resources are of lesser importance if the required fuel supply is not available, and in consequence has to be imported great distances.

Of all the minerals known to occur in Alberta, the coal resources alone are known with any degree of accuracy. An endeavor is now being made to gather detailed information on the extent and value of all the mineral deposits in Alberta. We already know the extent of the various coal basins in Alberta and the quality of the coal in each basin, but there is still much investigation to be carried out on the best uses to which Western Canada coal is suited, and the commercial by-products which can be obtained from certain coal. Wastage of resources endowed upon this country is a disease which must be remedied.

The oil resources on the other hand are still, to some extent, problematic, but indications are such as would warrant optimism in discussing future possibilities of this mineral. Some of the reasons for this optimism will be mentioned after the coal resources have been briefly discussed.

## Coal

The accurate knowledge of our coal resources in Alberta, eastern British Columbia and Western Saskatchewan, is largely the result of the laborious field investigations carried on by D. B. Dowling, J. B. Tyrell, R. G. McConnell, G. M. Dawson. These men are responsible for the first detailed examination, the geological structure and a real distribution of the coal measures.

Probably the earliest record of the occurrence of coal in Alberta was that made by Sir Alexander MacKenzie in 1788. He found a coal

seams on Great Bear River and another on the Red Deer River near the mouth of Rosebud creek. These are recorded on a map published in 1861.

In 1860 David Thompson made a trip from Rocky Mountain House down the Saskatchewan River and recorded all the coal seams, but unfortunately his manuscript was not published until about two years ago by Mr. J. B. Tyrrell.

In 1841 Sir George Simpson discusses the coal at Edmonton and notes that it was being used in the blacksmith shops and was as good as any other blacksmith's coal.

Coal was discovered in the foothills in 1845, and possibly in the Bankhead-Canmore district in the Banff basin. Sir James Hector, geologist on the Palliser expeditions records coal seams on the Athabasca river and the Pembina river in 1860, near the site of the present mines.

The coal resources of Alberta have played an important role in the early opening up and settlement of the prairies. The surveys for the proposed Canadian Pacific Railway across the prairie, were beginning about 1873 but no thought was then given to the mining possibilities in Alberta. The prairies were not looked upon favorably by the pioneer settlers, who chose the more wooded districts first. It was in 1875 that Dr. George M. Dawson was sent west to make the first exploration along the International Boundary line. His report that there were great seams in the treeless areas, and his accompanying map did much to bring about a change in sentiment towards the prairies. Mr. J. B. Tyrrell in '85 and '86 explored what was then called "Northern Alberta" including the Edmonton district. He mapped all the coal seams along the rivers. This report and map which is now a classic, greatly assisted in opening up the country, by showing the settlers where coal for fuel could be obtained.

When the first transcontinental line reached the mountains, the coal used was being hauled from Ohio. About 1881 the first coal seam was opened at Lethbridge and the first coal was hauled to Medicine Hat, and when used on the locomotives was found to burn so a narrow-gauge railway was built to Lethbridge and the mine was opened up. In '82 and '83 the first mine was opened at Anthracite and Canmore in the Cascade and Bow valleys. This coal was used in the heavy construction work of the railway in the mountains. It is a fact that had the plains and foothills not contained coal suitable for locomotive purposes, that much of the railway construction work within the mountains would have had to have been postponed until a later date.

This brief historical sketch is added to show that the presence of extensive seams of coal, and the pioneer development of the coal resources have assisted materially in opening up and in settling part of Western Canada.

As a result of the importance of coal in the future industrial development of the country the resources of this mineral have been studied in greater detail than any of the other mineral resources, and at an earlier date.

In making an estimate of the coal resources in any area it is necessary to determine the areal distribution of the coal-bearing formations, and the approximate thickness of the coal seams throughout that area. This stratigraphical information has already been obtained in Alberta and the distribution of the coal-bearing formations mapped as accurately as the geological knowledge to date will warrant. It is not my purpose to discuss the origin of coal at this time, but only to point out that coal is formed on the lowlands along the shore of the sea, inland swamps or lakes, and in some cases in coves and bays on the sea shore where driftwood has accumulated for geological periods and slowly transformed into coal. This last type can be seen today along the shores of Vancouver Island and the coast of British Columbia.

In Alberta there are three important coal horizons in the Cretaceous. These horizons are in most localities separated by shale formations of marine origin. There are no Carboniferous coal formations in Alberta and there are no Cretaceous coal seams in Eastern Canada. There are occasional seams of coal in the lower Tertiary in Alberta, but these are not regarded as valuable as the coal in a medium or low grade of lignite. In Saskatchewan there are workable seams of lignite near the base of the Tertiary. An experiment is now under consideration in Southern Saskatchewan to utilize this Tertiary lignite by carbonization and briquetting.

The Cretaceous coal seams in Alberta occur in the following formations:

1. Edmonton formation (Uppermost Cretaceous)
2. Belly River formation (Middle or Upper Cretaceous)
3. Kootenay formation (Lower Cretaceous)

When discussing the quality of the different coal in Alberta it is very important to remember that there are three distinct coal bearing horizons within this province, each belonging to a different geological age, and separated from each other by formations from 700 to 3,000 feet in thickness. It is also important to bear in mind that the Rocky Mountains form the western side of the province, so that a seam of coal which is lying nearly horizontal and undisturbed east of the foothills becomes a pitching seam, more intensely compressed and fractured by the effects of mountain building forces, where it occurs in the inner foothills or within front ranges of the Rocky Mountains.

The coals from these various horizons differ in grade and quality. Those from the lower and therefore older formations on account of their age, and of the greater weight to which they are subjected by

the overlying formations, are of a harder and better quality and more suitable for steam and coking purposes. The older coals are lower in moisture, higher in fixed carbon content, and as a rule, higher in volatile constituents. On the other hand the grade of coal in a single horizon improves towards the foothills and mountains. This is due to the fact that towards the west the coal seams have been more intensely compressed and otherwise carbonized by the stresses from the mountain building forces, which were uplifting the present Rocky Mountain system. These stresses and the formation of the coal in Alberta were in no way connected with volcanic forces, as is so commonly believed to be the case. The dynamic forces which assisted in compressing and metamorphosing the coal seams in Alberta, have been those connected with orogenic or mountain-building movements, or with much broader continent-wide uplift. This latter movement has been the cause of raising the coal seams and the associated beds from approximately sea level where they were formed, to their present elevation of over 2,200 feet above sea level.

The variation in the age of the coal and also the distance from the mountains has produced all grades of coal in Alberta, from a medium quality of lignite under the plains, to an anthracite within the front ranges of the Rocky Mountains.

In the past the erroneous idea has been too frequently held, especially by people in Eastern Canada, and, unfortunately, on various occasions has it been expressed that Alberta coal is primarily a lignite. Such a misconception has only hindered the development of the coal mining industry in Alberta. Lignite as it is most commonly defined, represents a very small percentage of the present annual output from the mines of Alberta. In order to overcome this mistaken use of terms, let every one adopt in the future as a slogan an expression which has been used on other occasions, namely that Alberta has the "right coal for every use."

Estimates of area and coal content have been made by Mr. D. B. Dowling in Memoir 53, published by the Geological Survey in 1914. Dowling gives the maximum value of the coal content, which is made from the knowledge of the coal seams to date, but only a fair percentage of the total estimate will ever be mined.

The Province of Alberta contains about seventeen per cent. of the coal reserves of the world, and eighty-seven per cent. of the coal reserves of Canada. It is also estimated that about ninety-six per cent of the coal reserves of Canada lie West of the Great Lakes. Mr. Dowling has estimated that Alberta contains an actual coal reserve of over 386,360 million tons covering an area of 25,300 square miles, and a probable reserve of about 673,550 million tons of coal over an area of 56,275 square miles. This makes a total reserve of 1,059,910 million tons



of coal within this province. This is an excellent argument in favor of increased coal production within the province to supply the entire demand of Saskatchewan, Manitoba, and possibly Western Ontario.

The Kootenay coal measures occur as narrow bands and are worked principally within the front ranges of the Rocky Mountains, or in the foothills close to the eastern escarpment of the mountains. These measures consist chiefly of semi-anthracite and bituminous coal, with a small amount of anthracite of undefined extent. The Kootenay coal basins include the Crow's Nest; Livingstone and Moose Mountain, which include deposits on the upper part of Sheep River and Kananaskis River; Banff basin which includes Bankhead, Canmore and Anthracite; Brazeau, Big-horn and Mountain Park; Brule Lake and Pochahontas; Smoky River basin north of the Athabasca river.

Numerous analyses have been made from Alberta coal, but in many cases analysis from the same coal seam and even from the same mine have varied greatly in percentage of constituents and in the heating values. Mr. John T. Stirling, Chief Inspector of Mines, has undertaken to have samples taken by some of the District Inspectors from all the mines in Alberta; these samples are being analysed at the Industrial Laboratories, University of Alberta, by Mr. J. A. Kelso. By this system more uniform results should be obtained. The results to date are given in the "First Annual Report on the Mineral Resources of Alberta" which has been published a few days ago.

Some of the analyses made from samples recently collected from the Kootenay measures are as follows:

(1) Crow's Nest Basin (13 samples)

Moisture, 0.6 to 3.2  
Volatile Matter, 24.1 to 28.9  
Fixed Carbon, 52.9 to 68.5  
Ash, 6.1 to 17.4

B.T.U., 11,940 to 14,140

(2) Banff Basin

Moisture, 0.6  
Volatile Matter, 8.6  
Fixed Carbon, 80.0  
Ash, 10.8  
B.T.U., 13,600

(3) Mountain Park

Moisture, 0.8 to 0.9  
Volatile Matter, 25.5 to 29.9  
Fixed Carbon, 62.8 to 67.7  
Ash, 6.0 to 6.4  
B.T.U., 14,190 to 14,330.

(4) Smoky River Basin

Moisture, 0.3 to 2.9

Volatile Matter, 12.5 to 22.6

Fixed Carbon, 63.4 to 82.5

Ash, 1.0 to 16.5

B.T.U., 12,000 to 14,500

The samples from Smoky River were collected by Mr. J. McVicar, and analysed by the Geological Survey. This basin is still out of reach of transportation, but field investigations indicate that it is the largest basin in Alberta that remains undeveloped.

The coal measures in the Belly River formation are mined in the vicinity of Lethbridge, but other exposures occur in the vicinity of Medicine Hat, the lower part of the Red Deer river, the south and north Saskatchewan Rivers where these streams cut through the Belly River formation. The area in Alberta underlain by the Belly River coal seams is very much larger than the actual outcrops would indicate. At Edmonton the Belly River coal seam has been located by drilling at 1,400 feet, and at Tofield the corresponding seam occurs at 1,050 feet. It will be some time however, before the Belly River coal seams are mined at such a great depth so long as equally suitable coal can be obtained at or near to the surface. These measures are distributed over 25,974 square miles, and contain an actual and probable reserve of 189,450 million tons of coal, which ranges from bituminous to sub-bituminous.

The analysis from nine samples from Lethbridge basin gave:

Moisture, 8.7 to 11.8

Volatile Matter, 30.7 to 39.8

Fixed Carbon, 39.3 to 50.6

Ash, 5.7 to 18.2

B.T.U., 9,330 to 10,880.

The Edmonton formation represents the uppermost member of the Cretaceous, which is roughly triangular in outline in Alberta with the widest portion in the vicinity of Edmonton. There are two coal horizons in this formation which cover a maximum area of probably 52,405 square miles. The actual coal reserve is estimated at 383,697 million metric tons, and a probable reserve of 417,261 million metric tons. The uppermost coal seam occurs near the top of the formation and varies in thickness from about five feet south of the Bow River, to a maximum of twenty-five feet on the North Saskatchewan River west of Edmonton. The upper seam is worked at Pembina and at other localities towards the foothills. About 500 to 600 feet below the upper seam a number of coal seams occur near the base of the formation. These seams are known to occur from the International boundary northward to the vicinity of Morinville, north of Edmonton. Coal is mined from these seams at Drumheller, Tofield, Edmonton, Clover Bar, Sturgeon Valley and Morinville.

The quality of the coal in the Edmonton measures is chiefly sub-bituminous but there is some area of bituminous and also some lignites. The term "Domestic Coal" has been applied to the grade of material mined from this horizon.

	No. of Analysis	Mois- ture	Vol. . Matter	Fixed Carbon	Ash	B.T.U.
Drumheller	21	14.3 to 19.8	30.6 to 34.2	85.6 to 46.5	4.5 to 9.7	9,020 to 10,225
Clover Bar	13	20.2 to 24.6	28.6 to 30.7	38.2 to 43.3	5.6 to 9.3	8,570 to 8,880
Pembina	3	15.8 to 18.0	28.6 to 30.7	42.3 to 43.6	8.5 to 11.3	9,030 to 9,480

The Tertiary coal seams in Alberta are unimportant and the quality of the coal is lignite.

The coal supply in Alberta is for the most part unlimited and the quantity already mined is negligible. In 1881 Alberta produced about 1,500 tons and in 1918 the production was 6,148,620 tons. Since the beginning of mining operations in this province the output has been only 55,700,000 tons. The waste in mining has been very high, but an endeavor is being made to reduce the loss in mining to a minimum. In the 1919 Annual report of The Mines Branch, Mr. J. T. Stirling, states that during the last fifteen years "100,484,038 tons of coal have been affected by mining operations" of which 47,227,498 tons were extracted and 26,628,770 tons have been "lost beyond any chance of recovery".

#### Oil Possibilities

At no time in the history of the world was such a persistent search ever made for natural reservoirs of petroleum as in the current year 1920. With the ever increasing uses for petroleum as liquid fuel for motive power on the land, the sea and in the air; for illuminating purposes, for power and lubrication in industry, for chemical manufactories, for preservatives and for road making, the demand is fast exceeding the production, and, what is more serious, the known supply in reserve. These cold facts are causing governments and especially large oil corporations to give serious attention to a search for possible new fields in almost every country the world over.

Many readers were startled with the statement in a recent number of the Engineering and Mining Journal by Mr. J. D. Northrop, a well known American geologist that although the United States produced in 1919 over 330,000,000 barrels of petroleum, yet the "petroleum production in the United States is expected to reach its maximum this year and to decline steadily thereafter," unless new sources of petroleum are discovered. Today the United States has about 62 per cent. of the

world's supply, while Mexico and Russia have about 20 per cent. Canada is today the most promising unproven and largely unprospected country for petroleum. The possibilities of finding reservoirs of petroleum are greater in Western Canada and especially in Alberta, than in any other single field where the geological structure is suitable for petroliferous accumulations.

When one realizes thoroughly and correctly the vast area in Western Canada that is underlain by formations suitable for the accumulation of petroleum, and the numerous seepages of oil and gas throughout this expansive area covering over 300,000 square miles, including the greater part of Alberta and the great MacKenzie basin and parts of Saskatchewan and Manitoba, one is compelled to become instilled with the most sincere optimism as to the possibilities of discovering reservoirs of petroleum in this part of Western Canada.

The question is naturally asked why are there possibilities of finding petroleum over such an expansive area in Western Canada. Time does not permit to give you the geological details of this region, but, permit me to say that between the Rocky Mountains on the west and the great Canadian or Laurentian complex of Pre-Cambrian rocks on the east and northeast, there is a broad trough-like structure, capped by sedimentary rocks of Cretaceous age and underlain by older Paleozoic sediments. This structure prevails from the Gulf of Mexico to the mouth of the MacKenzie basin. Many productive oil fields have been discovered and developed along the Western Plains of the United States. The northward continuation of these beds has stimulated investigation in the Western and Northern plains of Canada because natural accumulations of minerals are not confined to political boundaries.

It is true that the structure of the oil-bearing areas in eastern Colorado and Wyoming are more directly due to mountain building uplift "as well as to the effect of tangential pressure, while to the north (in Montana and Alberta) the deformation is largely due to tangential stresses," to quote D. B. Dowling in a recent number of the Canadian Mining Journal.

The problem of working out the most suitable structure in Alberta and the MacKenzie basin is extremely difficult on account of the paucity of outcrops and the thick veneer of glacial debris and expansive muskegs, so that development must of necessity proceed more slowly than it would if the structure would be more readily determined. The excellent work of the Geological Survey of Canada in previous years has assisted greatly in directing attention to certain areas in Alberta and the MacKenzie, but it is with the deepest regret that I must record that for the current year at least, field investigations by the Federal Geological Survey have ceased in the area containing oil possibilities, due to the fact that at least eight and possibly ten of the best trained geologists on

the permanent staff have resigned on account of insufficient salary, to conduct field investigations the world over for petroleum corporations on more remunerative terms.

Permit me also to mention at this point that the regretful indignation of geologists and scientists and those interested in Science is aroused by the recent information from Ottawa, that steps are being taken to minimize and possibly discard the vertebrate section of the National Museum, which contains the world famous dinosaurian fossils which have been collected from the banks of the Red Deer River in the Province of Alberta, after many years of laborious field and laboratory work, directed largely by the efforts of the late Lawrence M. Lamb.

Prospecting for petroleum has been going on in Alberta with more or less vigor since the boom days of 1914, but it was only last summer that a systematic search was begun by large petroleum operatives and corporations. Upwards of twenty geological parties are or will be in the field this summer, chiefly in the MacKenzie basin. About twenty-four drills will be operating early this season, some are being constructed at the present time. These drills will be located over the whole area from Cardston, near the International Boundary line, to Fort Norman on the MacKenzie River 1,200 miles north of Edmonton, in latitude sixty-five and almost due north of Victoria, B. C. Another drill will be in operation this summer on the north shore of Great Slave Lake near the west end, where pools of oil cover in the cavernous Devonian dolomitic limestones.

With the data now available it is not yet possible to say where the most promising fields are, but the geological structure is such that there are certain belts where the oil bearing horizons are too deep to warrant drilling. There are, however, several localities where indications are favorable and where development work is going on. These are (1) southwestern area about Cardston, Pincher Creek and Waterton Lakes where oil was first discovered by the drill about 1898; (2) southwestern area in the Sweetgrass hills; (3) Okotoks field which is the only producing field. In 1919 Alberta produced about 13,000 barrels of light kerosene oil most of which came from this field. The Calgary Petroleum Products Ltd. (originally the Dingman Company) have an absorption plant which recovers gasoline from the natural gas, ten degrees lighter than the ordinary commercial gasoline. The Southern Alberta Co. have a small refinery in the field which produces gasoline, kerosene and a distillate. (4) Eastern field, at Viking, a gas field has been proven about 2,200 feet; at Czar a well is being drilled by the Imperial Oil with promising results, while at Monitor and Birch Lake derricks are now being constructed. (5) Peace River Field in the vicinity of the town is being developed. Several wells have been drilled and a heavy tarry oil has been encountered near the bottom of the Cretaceous from 900 to 1,150 below

the surface. (6) Great Slave Lake field is being actively prospected this season and the drilling at Windy Point by the Imperial Oil will probably prove part of this field this season. (7) Lower MacKenzie Basin, includes the largest and least known possible field. This well being drilled near the mouth of the Bear River at Fort Norman is the pioneer well and will be completed this summer. (8) Athabasca field contains the most extensive and most remarkable natural deposit of semi-liquid asphaltum in the form of sandstones saturated with bitumen and formerly known as "Tar Sands". The McMurray sands form the base of the Cretaceous and rest upon the upper Devonian. The bituminous sands are exposed along the Athabasca River from McMurray for nearly one hundred miles. The proven areal extent of this formation is upwards of 10,000 square miles and possibly 15,000 square miles. The formation varies from 125 to 225 feet in thickness and the bitumen content ranges from twelve to twenty-one per cent. with an average of about 15 per cent. bitumen. In this formation there are possibly 189 cubic miles of saturated sands. Assuming that one ton of sand will give ten gallons of oil according to tests made, a simple calculation shows that this volume of sand would represent over 400,000 million barrels of oil or about 800 times the annual production of petroleum in the world.

Without relying on such figures we must realize that in this field alone there is a natural supply of enormous volume. The great problem to be solved before this reserve can be utilized is to find processes of extracting this solid petroleum from the bituminous sands on a commercial basis. This is one of the largest problems which we have confronting us today in Western Canada. A special endeavour will be made this year to successfully investigate this problem at the Industrial Research Department at the University of Alberta, but research on these sands is also being carried on in the United States and in Great Britain.

I am fully convinced that the strenuous efforts which are being made to find petroleum in the various localities mentioned will ultimately prove successful even though the quantity in any one field may be small.

# Canada's Empire of the North

Hon. Frank Oliver

Mr. Chairman, ladies and gentlemen:

I almost think that it is taking an undue advantage of innocent visitors who have come amongst us from a long distance and with the best of intentions to inflict upon them a series of speeches commencing, I believe, twenty-four hours ago in this building and being continued at this hour and for some time longer, I understand. However, those of you who are visitors came, I suppose, to spy out the land, to see what there was to be seen, and to carry back with you the best information you can get. You have travelled a very long distance through our Western country but it is a big country; you cannot go over it all, and so I have been deputed to give you such idea as may be in regard to that country which lies to the North of this, the most Northerly point of the journey that you are in the process of taking.

It may have struck you already, as a result of your travels, that Canada is quite a large country and I am not so sure that I have not heard a tone of suggestion that a good deal of that size was really of no material advantage. Now, let me take the view that for a country to be great in these times of combines and mergers, both political and commercial, it has to be big and that an appreciation of the size of our country as well as of the variety of conditions which prevail throughout its vast areas is of necessity of advantage to every man who hopes to have part in our future progress and particularly it must be of interest to that portion of the community represented here by the delegates of the Manufacturers' Association because, as my friend Mr. Parsons said last night, the Manufacturers manufacture, they hope, for everybody, and so they, above all other members of the community, are interested in the extent and the well-being and the possibilities of every part of their country.

In order to speak with understanding, or in order that I may be able to convey the ideas that I desire in regard to the North country, the country that you have not seen, I am more or less compelled to bring before your mind from one or another angle of vision that part of the country which you have seen. I am going to ask you to judge of what you have not seen by that that you have seen. In regard to the extent of country, you travel on the train and you see a vast sameness, going across the plains, and that sameness of scenery lacks interest; it is monotonous; to some it may be depressing. That all depends on the

point of view because when you consider that that sameness means a continuity for a distance of upwards of a thousand miles of the possibility of wheat field after wheat field, producing that which in all the ages of the world is the support of mankind and today stands in the place of gold as it never did before, then perhaps you realize that the sameness has a relieving feature and that to have one quarter-section after another of fertile soil succeeding for eight hundred of a thousand miles is, after all, better than to have it broken by granite ridges, by sandy plains, or by tracts of useless country. I ask you to look at the great plains not as comparing their scenery with that of Switzerland but I ask you to look at the great plains as carrying the possibility of the maintenance of human life in almost unparalleled expansion, food and fuel, which are the first necessities of all mankind, and on these great plains from the Red River to the Rocky Mountains you find one of the greatest, if not greatest, stretch of continued possibility of wheat production that is found in the known world; and when you reach the rise towards the Rockies in the Province of Alberta, as has already been said but I will take the liberty of repeating, you find underlying the country an abundance and superabundance of fuel supply such as has no equal in extent, quality or, I will say, actual value in any other single country in the world. Therefore, I ask you to measure the country you have not seen by the country you have seen and measure the country that you have seen by the standards that I have taken the liberty of placing before you today.

May I trespass on your time a little longer to speak of this country that you have seen. May I bring to your attention a feature that must be of vast interest to the Association of Manufacturers of Canada, because they are intimately and deeply interested in this phase of the question that I propose to place before you. Perhaps some of you have seen the celebrated picture of "The Man with the Hoe" or perhaps you have read Markham's poem discussing the disabilities and disadvantages from which "The Man with the Hoe" was suffering. The "Man with the Hoe," in the mind of the painter and of the poet, represented Agricultural effort and in the mind of both painter and poet it was not an inspiring sight. Let me say to you that the day of the Man with the Hoe is passed, that if the world depended today for its food supply upon men working with hoes the world would starve. The Man with the Hoe is a back number; it is the application of labor and energy and enterprise, skill and machinery, the appliances of science and industry to the production of food on these vast plains of Canada and on those of the United States—it is that that has made possible the maintenance of the present civilization throughout the world on the basis of its present food supply. Do not think of the farmer of the prairie west as you think of the farmer, we will say, in the Eastern Provinces,



whether it be New Brunswick, Quebec or Ontario. The farmer of the prairie west must deal with conditions as he finds them and under those conditions he must apply capital and machinery; he must apply power far over and above and beyond anything that he himself can originate with his hands or he cannot produce the bread of the world. As a matter of fact, not to labor the argument, but as a matter of fact, man for man throughout the prairie west over which you have travelled, there is a great food production per head of men on the land within that area than anywhere else in the world. (Applause). That, as I have said, is possible because of the energy, the enterprise, the skill, the investment of the men on the land, and it is possible because of the invention and the application of Science and Industry in the provision of labor-saving appliances such as were not heard of only a very few years ago. Possibly in the Province of Quebec on some of the narrow farms there one man with one horse is the working force. Come into Ontario and the man with two horses is the working force, but come out on to these Western plains and the man, to be an expert farmer on the Western plains, must drive four to six horses or he must be able to run a tractor when conditions are favorable. In order to get the labor of his six horses that this one man drives he must have corresponding machinery, implements, appliances of all kinds and conditions must be suitable for operation in that way. The farming industry of these Western plains is on an absolutely different footing from what it is today in Eastern Canada or what it was in the Western plains twenty or thirty years ago. I am saying this to these manufacturing delegates for the purpose of impressing upon them how important it is to the man on the land that he shall be able to secure the mechanical appliances that are necessary for his successful production at the lowest possible price. His investment is greater in proportion to his numbers than it is anywhere else in the world, therefore, his investment must be at the lowest figure or the price must come out of the consumer; and let me say this again, while I do not wish to introduce any suggestion of controversial argument, let me point this out, that this man handles his six horse team with his big investment of thousands of dollars in agricultural machinery in order to make those vast acreages, with a scattered house here and there and yonder, all productive, that this man when he has made that investment, when he has taken all the chances of hail and frost and drought and grasshoppers and every other adverse condition that comes to him, he must sell his product at the market price that the world offers. There is no protective tariff for him. Now, is it to be expected that this man will look at the question of tariff from the same point of view as the man who gets the benefit of the tariff? He cannot; it is impossible, and I am taking the liberty of putting this view of the case before you gentlemen, not as a matter of contention but as a matter of fact, so

that you will understand exactly what the situation is. Now, if I am not trespassing too long, let me discuss another question in regard to this Western country. I said we lack scenery, judged by the standards of some other countries, but we have opportunity and we have possibility for the support of human life which means the building of a nation. Because Egypt always had a crop of wheat Egypt was great in civilization for thousands of years, because it is upon wheat that men and civilization depend; and in this vast country from the Red River to the Rocky Mountains, with our possibilities of wheat production. It is here, having the foundation, that we hope and expect to build up a race. Now, is this race of men that is being produced in this Western country of an inferior character or calibre? Because, after all, that is the purpose of the organization of a nation, the building of the race. I will not labor the point but let me say that the people of the West are Canadians and if I make a distinction I would say they are more thoroughly Canadians than our fellow citizens in the East, for this reason, that the man who was born in the East is a Canadian by accident of birth but the man who has come to the West is a Canadian by choice, by determination, by intention, by expectation, by vote, by everything that leads a man on. Those of us who came from Eastern Canada or from the Old Country to this prairie West, we had all the world to go to if we pleased; the United States had beckoned millions, or over a million of our own native born Canadians; they had found room and opportunity there. We came to the Canadian West not because we could not find opportunity elsewhere but because we wanted to help to build up our own country and to make Canada great in this part where there is room and opportunity to make her great. Sectionalism! There is no sectionalism in this Western country so far as Canada is concerned nor, will I say it, so far as the Empire is concerned. I am not one of those who trade on patriotism but there are people who do and perhaps it is no harm, in this Memorial Hall, built to commemorate the services of the men who offered their lives and all they had in the cause of human liberty and of the security of the Empire, to point out that from the Red River to the Rocky Mountains, and in no place more so than right here where we stand, at what has been supposed to be the outpost of civilization, there was no place in all Canada where the response was more prompt or more general or more enthusiastic to the call of 1914 than right here in Edmonton and in all this country. (Applause). One of the first battalions to reach Val Cartier, I think the third or fourth to reach there, was the battalion from Edmonton, furthest of all away, and it was down there 1,300 strong, with their accompanying mounted corps of Alberta Dragoons with them at the same time. When it comes to talking patriotism, ladies and gentlemen, we do not talk patriotism but if the question is raised it is no harm to have it understood that

patriotism for Canada and the Empire burns as brightly even on these dull plains as in any other part of Canada and, will I dare to say, even more so. Just one further word on that point; in these plains we are a nation of immigrants, so they say, but not all; the process of settlement of this prairie West has been long. There is a native born population growing up in this prairie West, in this old settled town of Edmonton, and will I say that the suggestion that the response to the call to arms in 1914 in Eastern Canada was chiefly by our British immigrants; I will say that that does not hold in this Western country and that from this town of Edmonton and from end to end of the prairie west the native born responded to the first call and to the last call as enthusiastically, as unanimously as any other section of the community. I need not call attention to the General on the platform with his sleeveless coat (Applause); he is one of the native born who certainly answered the call, and he will say that he was only one representative of a whole class or of a community. One of the first men to fall on the Western front was a native born son, a half-breed from Lake Athabasca, 300 miles north of Edmonton, who answered the first call and who laid down his life, one of the very first in that struggle on the Western front. So, ladies and gentlemen, I have taken the liberty of dealing with these questions with you so that the ground shall be cleared for what I desire to say in regard to the country of the North, that you will know that you have part in the building of a country that is great both in its possibilities and its people, in the part that you have seen, and that therefore you will be willing to believe me when I tell you in regard to the part that you have not seen.

From Winnipeg to Edmonton is 800 miles, 800 miles of unbroken fertility, of unbroken possibility of production. From Edmonton to Hudson's Hope, northwesterly, is 400 miles, again an unbroken stretch of possible production, not, it is true, prairie country all the way but still a country that is within climatic and soil conditions capable of the same production as the country from the Red River to Edmonton. It is a fact that the line of temperature and the line of possibility does not run East and West but runs northwest and as a fact in the Peace River country, 400 miles northwest from Edmonton, the leaves come on the trees as quickly; the grain is sown in the ground as soon; conditions of cultivation are just as favorable as they are on the banks of the Red River 1,200 miles further south and east. You say that is a large order; produce the proof. The proof is that of last season's crop in the Peace River country the Edmonton & Duvegan Railway has brought out up to date 1,800 carloads of wheat, oats and barley, that is since August last; of which 700 cars are wheat, 1,100 cars are oats and the remainder barley and the oats are brought out, in large measure, for the purpose of seed throughout the rest of the prairie west; and the pro-

duction of grain was in excess of the amount brought out; to what extent we cannot say; but the fact is that a large proportion of the crop of last year still remains in the farmers' hands in the Peace River country because of the lack of railway equipment to bring it out to the markets of the world. So that when you speak of the prairie west do not stop at Edmonton, carry it on to Peace River, and remember that this year, as last year, the southern part of the prairie west depended for its seed oats on the quantity and the quality of the products of the Peace River.

Now, just a comparison as to extent. It is 1,200 miles from the Red River, at Winnipeg, to Hudson's Hope, on Peace River, and it is just 1,200 miles, as near as may be, from Coutts on the International boundary line south of Lethbridge to El Paso Texas, on the Mexican border. There is a continuation of agricultural possibilities and of agricultural production between the Red River and Hudson's Hope on the Peace which extends as far as the distance across the whole United States; this is some country, ladies and gentlemen; it is worth talking about; it is worth working for; and it holds out possibilities for the future that certainly are worthy of consideration.

On the lower Peace River, at the settlement of Vermilion, in Township 108, reckoned from the International boundary—that does not mean anything possibly to eastern men but it tells exactly all about it to those who are familiar with the Dominion land system of survey—Fort Vermilion on the Lower Peace River is in township 108 or, in other words, approximately 325 miles further north than the City of Edmonton. Edmonton is 310 miles north of the International boundary line and at Fort Vermilion on Peace River people have been raising wheat there for over thirty years and they have had a less proportion of failures in that period than possibly any other part of the prairie west. For two years in succession Mr. Sheridan Lawrence brought his surplus wheat crop up the Peace River to Peace River town by steamer and the wheat raised 250 miles from railway and 325 miles north of Edmonton was added to the food supply of the world. This year Mr. Lawrence brought up for sale at Peace River a car load of fat cattle and Vermilion, in this year of potato scarcity, shipped south a thousand bushels of potatoes to help the shortage in this more southern country where our potatoes, in large measure, were caught by the early winter and late fall. Now, the conditions at Vermilion, 300 miles north, are established as being not only as favorable for agriculture but as more favorable for agriculture than on the International boundary 300 miles to the south, so that instead of getting away from the possibilities of agriculture by going north you are getting into a more favorable and assured condition for agricultural production than in the south. In regard to this matter of north and south, let me make this suggestion, that after all Canada is a

country of winter. It is winter in Canada with frozen ground and frozen streams all the way from Sidney right out to within a few miles of the Pacific coast; it is only on the Pacific coast that we have not the frozen ground in the winter time; so that it comes to this, that Canada is a one crop country and while one part of Canada is colder in winter than the other, it is not in the winter that we raise our crops, it is in the summer, and it is a question not of winter conditions but a question of the summer conditions that decide whether there is a possibility of crop production or not, and if the season for one reason or another—if the summer season is long enough and good enough the question of the conditions of the winter does not arise. It is a question whether we have a suitable summer in the north for raising crop and if we can raise it there the question of latitude is not a matter of consideration. As to the extent I have proven to you, that for 325 miles north of Edmonton we are within the range of climatic conditions that are suitable to successful crop production. Just may I work a little on that point. It is generally supposed that because the equator has the hottest climate in the world and the poles have the coldest climate that temperature or climate is regulated by the distance from the equator or from the poles, that is to say, that as you go north you necessarily get a condition of colder climate and as you go south you get warmer. Let us say that is a mistake, that there are other conditions that govern climate besides latitude, that altitude has as much bearing on climatic conditions as latitude, besides air current, surface conditions, geological formation all have a bearing on climatic conditions. If latitude governed climatic conditions then the climate of Eastern Canada would be far different from what it is. It may be worth while, to bring out my point thoroughly, to just state the conditions as to comparative climate in southerly latitudes having regard to Eastern Canada. The settled part of the Province of Ontario extends from latitude 42 which is the southern part of the County of Essex, to latitude 46, which is about the latitude of Pembroke in the County of Renfrew on the Ottawa River, that is, the settled portion of the Province of Ontario extends through four degrees of latitude. Now, if you go over to Europe you will find that in the same latitudes an entirely different climate exists, that latitude 42 in the County of Essex, Ontario, is the latitude of Rome, in Italy; that Toronto is in the latitude of the Italian Riviera, and that Owen Sound, Ontario, is south of Venice, Italy. You will find that Paris, in France, is 100 miles in further north latitude than the City of Quebec. Now, that means, of course, that there must be influences other than those of latitude creating the difference in climatic conditions, between the eastern coast of America and the western coast of Europe. You do not find it strange that in the British Isles there is open ports, there is never frozen ground; people plough all winter, and yet Edmonton, where we have a long and

severe winter, is in the same latitude as Dublin and Liverpool. The conditions that make for milder climate on the Western coast of Europe also make for milder climate on the western coast of America; as the Gulf Stream in the Atlantic moderates the climate of western Europe so the Japanese Current moderates the climate of Western America, with the result that there is a vast body of warm water in the North Pacific from which currents of air blow easterly across British Columbia and Alberta and still further into the interior of the country, carrying a mildness of climate entirely distinct and different from that which prevails on the Eastern coast of America, and as a consequence the agricultural possibilities of the Great North are not limited by the same lines of latitude that would limit those possibilities in Eastern Canada. The conditions which govern climate on the western coast of America, give us a northerly extension of agricultural possibilities in this western side of the continent that compare very favorably with the agricultural possibilities in the same latitudes on the continent of Europe. It may interest you to have the facts set forth that latitude 49, which is the southern boundary of the prairie west and which I am sure many of you gentlemen from the East look upon, or have looked upon, as being only next door to the Arctic—that north of the 49th parallel in Europe is included the whole of the war area of France, the whole of Belgium and Holland, five-sixths of the Empire of Germany, the whole of Szecho-Slavic, the northern part of old Austria, the whole of Poland, of Lithuania, of Esthonia, of Finland, and possibly five-sixths of Russia, all north of the 49th parallel in Europe, perfectly good country so far as climate and agricultural possibilities are concerned; and when you come over towards the Pacific Coast equally good country with equal agricultural possibilities in this Province of Alberta east of the Rocky Mountains. Studying the reports of the Natural Resources Department of Ottawa and studying the reports of the geologists, it is a fact that the clay country, the country that intervenes between the Laurentians on the east and the Rockies on the west extends northerly from Edmonton not less than 600 miles, extends north to the latitude of 61 and 62 in the latitude of Great Slave Lake, extends beyond the boundary of the Province of Alberta, cutting Alberta into three parts; we will say, southern, central and northern, taking southern Alberta as from latitude 49 to 51; Central Alberta from 52 to 55, and northern Alberta from 55 to 60; these are the divisions. Now, Peace River is all north of 55; the whole of our Peace River country is north of 55; it is that country which, I tell you, has given us our seed oats in this southern part of the country this last two years, which last year raised more wheat and other grains than the railroad could haul out; therefore, there is no question as to the agricultural possibilities of that Peace River country. Now, north of 55 on the continent of Europe is the whole of Scotland, parts

of England and Ireland, the whole of Denmark, the Provinces of Pomerania, East and West Prussia in Germany, a large part of Poland, Lithuania, Isthonia, Finland and about half of Russia. Surely, given equally good climatic conditions, given a condition of soil equal to that of the rest of this prairie country, surely we have in that vast north from latitude 55 to latitude 62, a possibility of development of production equal to that which carries in the continent of Europe tens of millions of people, surely we are as good as those people in Europe; surely what they have done we can do; surely what they have done we are more than doing so far as we have got yet, and we can say to you that when the possibilities of the plain lying between Edmonton and Winnipeg are exhausted or exploited there remains still another area as large and as productive to be brought under control and cultivation by the energy and enterprise of men, of Canadians, lies northward from Edmonton north to latitude 62. (Applause). Just as to the area, the Empire of Austria-Hungary had a total area of 240,000 square miles, the great Empire of Germany with its forty or fifty or sixty millions of people, and part of it, remember, the most fertile part of it north of latitude 55, had an area of 208,000 square miles. The distance from Edmonton to Winnipeg is 800 miles and we will say that there is a belt of country 300 miles wide for the length of that 800 miles; if you multiply 800 by 300 the result is, I think, 240,000, equal to the Empire of Austria-Hungary with its over forty millions of people at the outbreak of the war, carrying in its bosom Hungary, the greatest wheat-producing country of Europe, Bohemia as well, almost as great and valuable a country; they had forty millions of people within that area of less productive country than lies between here and Winnipeg acre for acre, producing in value bushel for bushel, and they had over forty millions of people. And from Edmonton north an area 600 miles from north to south by 400 miles from east to west, or say 500 miles from north to south and 400 miles from east to west, and you have 200,000 square miles; you have an area unexploited yet except a little part of the Peace River, an area as great as that of the whole German Empire, north of Edmonton, available to the energy and enterprise of our people for its exploitation, an area that in Germany maintains sixty millions of people, who very nearly upset the world. I have been in Germany and I have been in our north country and I am free to say that while that north country is not all prairie, that while, as in the case of Eastern Canada, it will take in many instances labor and effort and investment to bring it under cultivation, I am here to say that acre for acre it contains greater possibilities of production than does, or did, or ever can, the German Empire. (Applause). I will not detain you much longer, but when I have told you that we have agricultural possibilities up to latitude 62, that is the latitude of Fort Simpson on the Mackenzie, I do not want you to consider for a minute



that that is the end of our possibilities. I want to tell you that is the beginning of the Mackenzie river; the Mackenzie river is the outlet of the Great Slave lake; it begins north of latitude 61 and extends for over 600 miles to the Arctic ocean, a valley of clay country from 50 to 150 miles in width. What the agricultural possibilities of that vast area are I will not say, but I will tell you this, that although we have railroads extending only 300 miles north of Edmonton, these railroads connect with the navigable waters of the Athabasca and the Mackenzie so that whatever trade there is or whatever trade there ever will be in all that vast country from Edmonton to the Arctic ocean—and the distance is 1500 miles direct—all that trade, by reason of the routes which are travelled, comes to or starts from the city of Edmonton. I was in a boat-yard the other day here in the city of Edmonton and I found the proprietors building schooners to be sold to the Eskimo on the Arctic coast 1500 miles from here. I met a gentleman on the street yesterday; he said: "You are going to speak tomorrow at the Memorial Hall?" I said: "Yes, I hope so." He said: "You might just mention that today I was putting up a couple of packages of goods for distribution and one of these packages is to go to Herschel Island and the other is to go to a point 500 miles further east on the Arctic coast. Now some of you gentlemen come from the city of Sherbrooke and some of you from the city of Montreal and some from the city of Toronto, and you reckon the areas that are available to the trade of your respective cities, but I ask you, do any of those cities take in a range of trade actually being transacted at the present time carrying the possibilities that I have sketched to you, an area, I say, or a radius of 1500 miles as is the trade radius of this city of Edmonton? There are possibilities in this country; it is a big country; it is a good country; there is room in it for everything that every man that is in it can do and there is room for many millions more to come and do the best they can as well.

In regard to other resources of the North Country, I will not take the time to deal with them at any great length. I will just point out this, that however climate may affect agricultural production, climate has no effect or latitude has nothing whatever to do with the existence of mineral deposits. The gold of the Yukon is one evidence on that point, so that when we speak of the possibilities of mineral production in the country to the North you can cut the idea of northern latitude out of your mind so far as affecting any of those mineral conditions.

Geologically, this country lying between the Laurentians on the East and the Rockies on the West, does not carry the precious metals; the precious metals are to be found, so the geologist tells us, in the Laurentian formation or in the formations which are connected with it; the formation that lies west of the Laurentian, between that and the Rockies, is the formation in which is carried the economic metals, not the precious but economic metals, including coal, oils, salt and



gypsum and tar and gas; these we know—we have evidence these are there; we see them; the geologists tell us that the formation carries these; we know they are there; so that while these are not the minerals which tend to ready and sudden exploitation, as does gold and silver, they are still the minerals and the kind of minerals that lend themselves to the building up of population; they are necessities of life; they are needed in the world today, and if we have in that North country, as the geologists tell us we have, a vaster area suitable to the production of oil than is found in any other area in the world, we have reasonable grounds for believing that some time and some how that oil will be struck. We have enterprise at work now; we have struck oil in some places; but the point I want to take to this visiting delegation is this, that just as in the Southern part of Alberta we admittedly have the greatest coal area, the greatest single coal area in the known world, so in Northern Alberta we have, on the evidence of geology, the greatest possibility of oil bearing territory in the world, that is, the greatest area of oil bearing territory in the world.

I do not wish to impose on the consideration of an audience such as this. I have trespassed too long as far as I have gone now. I hope I have been able to place before your minds some appreciation of the possibilities that are at our doors, and I hope I have not created the impression that those possibilities are there simply to be picked up. This is a country of strenuous conditions, a country of strenuous climate and strenuous conditions; there is nothing for nothing in this country. These are possibilities that I have mentioned, but they are only possibilities to those who have the energy and the enterprise and determination to go after them and to turn them to account. This is no country for picking up wealth; it is a country in which men have opportunity but they must use the opportunity or they cannot succeed. It is certainly a pleasure to find, or to meet so many of the men who are doing things in Eastern Canada, and although Canada is so great in area and although it is geographically divided into many sections, it has struck me on many occasions that it is a remarkable fact that there is such a similarity of thought and idea and aspiration and conditions generally from one end of Canada to the other, that we are a Canadian people and that we are in the way of building up a united country. Let me say to you Manufacturers that we, the people of this prairie West, whatever discussions may come up, we have no jealousy or antagonism to you or your success; as Canadians we are proud to see our country come to the front in manufacturing as in everything else; we have nothing but good wishes for you in the success of the enterprises in which you are engaged. Do not have the idea that there is any jealousy or any disapprobation on the part of the people on the plains against the Manufacturers of the East in their success, in the

proper conduct of their affairs. It is an old saying that there is always a difference of opinion between the buyer and the seller; what you have to sell we have to buy; to us it is always dear; to you, of course, I suppose it is always cheap. There must always be a difference of opinion and a different point of view in regard to these matters in which you and we come together in trade and business transactions, but there is above and besides and over all that, the desire on the part of the people of this Western Canada to see built up a great Canada that shall extend in its greatness from one ocean to the other (Applause), that shall be great in all its parts, and while we stand strongly for what we consider to be our rights in all the adjustments of trade and commerce and industry and everything else, we find no fault with you because you do the same, but we still must stand for what we consider our rights and we certainly will. We welcome you here because you are Canadians, because you are big men and doing big things, and we think we are a little in that line ourselves, some of us (hear, hear). And we feel that there is a community of interests; we are glad that you have come here; we believe that you will go away with a fuller knowledge and a better appreciation of conditions as they are here, and that possibly you and I will be able to do business on better terms, with better feeling, as a result of your visit, than we have ever been able to do before. (Applause). Thank you.